THE LEIBNIZ-ARNAULD CORRESPONDENCE[1]

Introduction to the text

Leibniz's correspondence with Antoine Arnauld (1612–94) is one of the clearest and most comprehensive expressions of Leibniz's philosophy in the so-called middle period. [It will be] helpful to know a bit about its background. Arnauld was a French philosopher, mathematician, and theologian. Today, he is known primarily as the author of the Fourth Set of Objections to Descartes's Meditations on First Philosophy*, the co-author of the Port-Royal Logic,1 and one of Leibniz's correspondents. In his day, Arnauld was famous for a few additional reasons. One such reason was his prominent role in the controversial theological movement Jansenism. The theological doctrines attributed to Jansenism were condemned by the Catholic Church; Arnauld was eventually forced to flee to the Netherlands. It is from his exile that Arnauld corresponded with Leibniz, through their mutual acquaintance Ernst, the Landgrave of Hessen-Rheinfels.*

When Leibniz started the correspondence, Arnauld was already 74 years old and, for the reasons just mentioned, a somewhat controversial figure. Yet Leibniz clearly had the utmost respect for Arnauld; he told Ernst at the beginning of the correspondence that he did not know anyone more fit to judge his philosophical writings than Arnauld, whom he described as "careful, . . . clearheaded, and . . . reasonable" (11 February 1686, A II 2: 4/LAR 3). We can only speculate about Leibniz's reasons for wanting to correspond with Arnauld. One reason was presumably to get feedback on—and perhaps eventually an endorsement of—his newly developed ideas from a respected, senior philosopher. Relatedly, Leibniz may have hoped that the correspondence would be useful for his project of reconciling the Protestant and Catholic Churches. He strove to develop a philosophy and theology that would be acceptable to both traditions and that would dissolve their differences. Even though Arnauld was a controversial figure, he was an expert on Catholic theology and hence an able critic of Leibniz's project.

In any case, Leibniz initiated the correspondence in February 1686. He sent Arnauld—via Ernst, who knew Arnauld's clandestine whereabouts—a short summary of his most recent philosophical composition, the "Discourse on Metaphysics", and asked Arnauld for his opinion.4 This summary is less than three printed pages long and represents the content of each section of the "Discourse" with just one or two sentences. The ensuing correspondence, which continued until March 1690, consists of eleven letters from Leibniz to Arnauld, five direct responses from Arnauld, some letters from both men to Ernst, and several unsent drafts of Leibniz's letters. It covers a wide range of topics. In what follows, I will concentrate on four of the most central ones: (a) complete concepts and contingency, (b) substance and body, (c) causation, and (d) the special status of rational souls in God's plan. Leibniz clearly took the exchange with Arnauld extremely seriously; he often composed multiple drafts before sending a reply. And even though the correspondence got off to a very rocky start (as we will soon see), Leibniz appears to have been happy with it overall. In fact, he later started revising it for publication, though in the end he did not publish it. […]

When Leibniz sent the summary of his "Discourse" to Arnauld, he was presumably hoping for an encouraging response from the ageing philosopher and theologian. Yet Arnauld's initial reaction was anything but positive. After just one introductory sentence, his first letter bluntly denounces the doctrines expressed in Leibniz's "Discourse": he calls these doctrines "shocking", says that they "horrify" him, and complains that he does not "see what the utility could be of a work which to all appearances will be rejected by everyone" (13 March 1686, A II 2: 9/LAR 9). The letter mentions just one example of a Leibnizian doctrine that Arnauld deems unacceptable: the doctrine of complete individual concepts, as it is described in §13 of Leibniz's summary (13 March 1686, A II 2: 9/LAR 11). That section of the summary does not contain much detail about the doctrine; it merely says that every person has an individual concept containing everything that ever happens to this person, and that these concepts "contain the a priori proofs or reasons for the truth of each event" (§13, A II 2: 6/LAR 5). In other words, everything that happens in a person's life can in principle be derived from the person's concept.

The doctrine of complete concepts, Arnauld claims, undermines God's freedom. He illustrates this in connection with biblical Adam. According to Leibniz's doctrine, Adam's concept contains everything that ever happens to him. Hence, the

[1] Selections from G. W. Leibniz. *The Leibniz-Arnauld Correspondence: With Selections from the Correspondence with Ernst, Landgrave of Hessen-Rheinfels.* Text established and translated by Stephen Voss. The Yale Leibniz series. (New Haven: Yale University Press, 2016). I have added some brief remarks to indicate the main arguments of the correspondence.

concept also includes complete information about—or the complete concepts of—Adam's progeny. As a result, to create Adam is to create an individual whose very concept fixes all of history. God may have been free to either create or not create Adam. Yet, once he has decided to create Adam, God lacks freedom regarding any other aspect of the world, since everything else follows from Adam's existence as a matter of conceptual necessity. This, Arnauld worries, is a form of fatalism or necessitarianism: everything happens necessarily once the initial decision is made, and God lacks any further control over his creation (13 March 1686, A II 2: 9/LAR 9). Nothing is contingent or up to God, with the sole exception of God's choice concerning Adam's existence.

Leibniz's disappointment with Arnauld's unsympathetic response is palpable, but he does not give up on the correspondence. Instead, over the course of the next few letters, he patiently explicates his motivations for the doctrine of complete concepts and argues that it does not have the shocking consequences that Arnauld worries about. In a few places, Leibniz insists that the doctrine of complete individual concepts. […]

The Letters

Week 7: 1, 2, 4, 8, 14, 17, 20, 21, 23, 25 (pp. 2-26)
Week 8: 30, 33, 34 (pp. 26-32)

[*The Yale Leibniz edition includes thirty-seven letters, only twenty-eight of which were actually posted. I have made a much smaller selection of these letters, enough to allow us to get a good sense of the entire correspondence. We will focus on two problems: (1) the problem of inclusion (week 7) and the problem of compossibility (week 8). It is the first problem, that of inclusion, that is the focus of the Leibniz-Arnauld Correspondence.*

Leibniz had formulated the problem of inclusion in his Discourse on Metaphysics*, in which he provided a simplified account of his entire system. In article 9 of this* Dicourse, *he states: "That each singular substance expresses the whole universe in its own way, and that everything that happens to it is included in its notion, with all the circumstances and the whole series of external things." He explains this with an image that is very illuminating and very misleading at the same time, he says:*

> *Moreover, every substance is like an entire world, and like a mirror of God, or indeed of the whole universe, which each one expresses in its own way—it is a bit like the same city is represented in various ways* [diversement représentée] *depending on the different situations* [les différentes situations] *of someone looking at it. In a way, then, the universe is multiplied as many times as there are substances* […][2]

Leibniz is not saying here that the city looks different depending on the angle from which you look at it. This would be a platitude. His point is much more radical. There is an infinite series of potential shapes that the city can take, depending on the moment of the day, the point from which it is viewed, etc. Each of us grasps this infinite series and express it, but only a few of these potential shapes of the city are expressed clearly by us whereas all the others are only expressed in an obscure way. In the Leibniz-Arnauld Correspondence *these difficulties only emerge slowly, because Arnauld did not get the full texts of* Discourse on Metaphysics*, but only a summary. This slow tempo makes it easier of follow, but at the same time it is harder to keep track of what is essential.*]

1. Leibniz to Ernst for Arnauld, [Zellerfeld], 11 February 1686

Lately (being in a place where I had nothing to do for a few days) I have written a little discourse on Metaphysics, about which I would be very happy to have M. Arnauld's opinion. […] I entreat Your Supreme Highness to enclose this with the summary I am sending him, and to send them

[2] Leibniz, *Discours de métaphysique,* article 9 (my translation) https://fr.wikisource.org/wiki/Discours_de_m%C3%A9taphysique.

both to M. Arnauld.

[This 'short discourse' is Leibniz's *Discourse on Metaphysics*, of which Arnauld only received a summary. I have only included article 13 of this summary:

13. As the individual concept of each person contains once for all everything that will ever happen to him, one can see therein the a priori proofs or reasons for the truth of each event, or why one happened rather than another. But even though these truths are sure, they are nevertheless contingent, being founded on the free will of God and creatures, whose choice always has its reasons, which incline without necessitating.][3]

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[3] In *Discourse in Metaphysics*, the following explanation of this article 13 is given: "[…] We have said that the notion of an individual substance involves, once and for all, everything that will ever happen to it; and that in considering that notion one can see in it everything that can ever be truly said of it, just as we can see in the nature of a circle all the properties that can be deduced from it. But it seems that this means that the difference between contingent and necessary truths will be destroyed, and that there will no longer be any room for human freedom, and an absolute fate will reign over all our actions as well as over all the rest of the events in the world. To this I reply that we have to make a distinction between what is certain and what is necessary. Everyone agrees that future contingents are definite, since God can foresee them; but this is not to say that they are necessary. But (it will be said) if some conclusion can be infallibly deduced from a definition or notion, it will be necessary. And here we are maintaining that everything which happens to a person is already included implicitly in that person's nature or notion, just as its properties are in the definition of a circle; so the difficulty still remains. In order to settle it decisively, I say that connection or sequencing is of two kinds. One is absolutely necessary, and its contrary implies a contradiction; such deduction pertains to eternal truths, such as those of geometry. The other is necessary only *ex hypothesi*, and, so to speak, accidentally; this is contingent in itself, and the contrary does not imply a contradiction. This kind of connection is founded not on completely pure ideas and on God's understanding alone, but also on his free decrees, and on the history of the universe.

[*The example of Julius Caesar*] Let us take an example. Since Julius Caesar will become lifelong dictator and master of the Republic, and will overthrow the freedom of the Romans, these actions are comprised in his notion; because we are assuming that it is the nature of this kind of perfect notion of a subject to include everything, so that the predicate will be involved in it, ut possit inesse subjecto [so that it can be in the subject]. We could say that it is not because of that notion or idea that he will perform the action, since that notion applies to him only because God knows everything. But, it will be insisted, his nature or form corresponds to that notion, and since God has imposed this character on him, it is thereafter necessary for him to comply with it. I could reply to that by instancing the case of future contingents—they have as yet no reality except in God's understanding and will, yet since God has therein given them that form in advance, they will nevertheless have to correspond to it. But I prefer to resolve difficulties rather than excuse them by the example of other similar difficulties, and what I am going to say will serve to clarify the one case as well as the other. So it is here that we have to apply the distinction between different kinds of connection. I say that what happens in accordance with its antecedents is definite, but is not necessary; if anyone did the contrary, he would not be doing anything impossible in itself, although it is (*ex hypothesi*) impossible that it should happen. For if some person were capable of completing the whole demonstration by means of which he could prove this connection of the subject (which is Caesar) with the predicate (which is his successful enterprise), he would then show that the future dictatorship of Caesar had its foundation in his notion or nature, that a reason can be found there why he resolved to cross the Rubicon rather than stop, and why he won rather than lost the day at Pharsalus: that it was rational and therefore definite that this would happen, but not that it is necessary in itself, or that the contrary implies a contradiction. In a similar way it is rational and definite that God will always do the best, although what is less perfect implies no contradiction. For we would find that the demonstration of this predicate of Caesar's is not as absolute as those of numbers or of geometry—it presupposes the sequence of things that God has freely chosen and which is founded on God's primary free decision, which is always to do what is most perfect, and on the decision God made (as a consequence of that primary one) with regard to human nature, which is that man will always (though freely) do what seems the best.

Now, any truth which is founded on this sort of decision is contingent, even though it is certain, because decisions in no way alter the possibility of things. And, as I have already said, although God certainly always chooses the best, that does not stop something less perfect from being and remaining possible in itself, even though it will not happen—for it is not its impossibility but its imperfection which makes him reject it. But nothing is necessary if its opposite is possible. We will, therefore, be in a position to resolve these kinds of difficulty, however great they may seem (and in fact they are no less serious for everyone else who has ever dealt with this matter), so long as we keep fully in mind that all these contingent propositions have reasons why they are so rather than otherwise—or alternatively (and this is the same thing), that they have a priori proofs of their truth which make them certain, and which show that the

2. Arnauld to Ernst for Leibniz, 13 March 1686

I have received, My Lord, what Your Supreme Highness has sent me of the metaphysical thoughts of M. Leibniz as a token of his affection and esteem, for which I am very much obliged to him, […] I find in these thoughts so many things that horrify me, and that nearly all men if I am not mistaken will find so shocking, that I do not see what the utility could be of a work which to all appearances will be rejected by everyone. As an example of these things, I will mention only what he says in art. 13. "That the individual concept of each person contains once for all everything that will ever happen to him, etc." If this is so, then God was free to create or not to create Adam, but supposing that he did will to create him, everything that has happened since then, and will ever happen, to humankind must have happened or must happen by a necessity that is more than fatal. For the individual concept of Adam contained his having so many children; and the individual concept of each of these children, everything that they would do and all the children they would have; and so on. There is therefore no more freedom in God with regard to all this, supposing that he willed to create Adam, than of maintaining that God was free, supposing that he willed to create me, not to create anything of a nature capable of thought. […]

4. Leibniz to Ernst for Arnauld, Hanover, 12 April 1686

My Lord, I do not know what to say to M. *Arnauld's* letter, and I would never have believed that a person whose reputation is so great and so well deserved and from whom we have such fine reflections in morals and logic would be so quick with his judgments. […] He chooses one of my theses to show that it is dangerous. But either I am incapable for the present of comprehending the difficulty or I see none in it […] I said in Article 13 of my *Summary* "that the individual concept of each person contains once for all everything that will ever happen to him." He draws this consequence from it: that everything that happens to a person, and even to all of humankind, must happen by a necessity that is more than fatal, as though concepts or foreseeings made things necessary; and as though a free action could not be comprehended in the perfect concept or view that God has of the person to whom it is to belong. And he adds that perhaps I will find no difficulty in the consequence he draws. However, I had protested explicitly in the same article that I 16 did not allow such a consequence. […]

I come to the proof of his consequence, and to answer it better I shall quote M. Arnauld's very words.

"If this is so" (namely that the individual concept of each person contains once for all everything that will ever happen to him), "God was not free to create everything that has happened since to humankind, and anything that will ever happen to it must happen by a necessity that is more than fatal." (There was some flaw in the copy, but I believe I can restore it as I have done.) "For the individual concept of Adam contained his having so many children; and the individual concept of each of these children, everything they would do and all the children they would have; and so on. There is therefore no more freedom in God with regard to all this, supposing that he willed to create Adam, than of maintaining that God was free, supposing that he willed to create

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connection of the subject with the predicate in these propositions has its foundation in the nature of each. But they do not have necessary demonstrations, because those reasons are only based on the principle of contingency or of the existence of things, that is, on what is or what appears the best among a number of equally possible things. By contrast, necessary truths are founded on the principle of contradiction, and on the possibility or impossibility of essences themselves, without any regard to the free will of God or of created things." G.W. Leibniz, *Philosophical Texts,* translated and edited by R. S. Woolhouse and R. Francks (Oxford: Oxford University Press, 2011), 63-66.

me, not to create anything of a nature capable of thought." These last words must properly contain the proof of the consequence. But it is quite manifest that they confuse hypothetical necessity with absolute necessity. A distinction has always been made between what God is free to do absolutely and what he has bound himself to do in virtue of certain resolutions already made, and he makes hardly any that do not already have a bearing on everything. It is little worthy of God to conceive him (on the pretext of maintaining his freedom) after the manner of some Socinians, and like a man who makes resolutions according to the circumstances, and who would no longer be free now to create what he finds good if his first resolutions concerning Adam or others already contained a relation to what concerns their posterity, whereas everyone agrees that from all eternity God has regulated the entire succession of the universe, without this diminishing his freedom in any manner. […]

If one also thinks even a little about what I am saying, one will find that it is manifest from the terms; for by the individual concept of Adam I certainly understand a perfect representation of such and such an Adam who has such and such individual conditions, and who is thereby distinguished from an infinity of other possible people very similar to him, but nevertheless different from him (as every Ellipse differs from the circle, however much it may approach it), to whom God preferred him, because it pleased him to choose precisely such and such an order for the universe.

And everything that follows from his resolution is necessary only by a hypothetical necessity, and in no way destroys the freedom of God or that of created minds. There is a possible Adam whose posterity is such and such, and an infinity of others whose posterity would be otherwise.

Isn't it true that the possible Adams, if they may be so called, are different from one another; and that God chose only one who is precisely our own? There are so many reasons that prove the impossibility, not to say the absurdity or even impiety, of the contrary that I believe that at bottom all men are of the same mind when they think a little about what they say. Perhaps too if M. Arnauld had not harbored the prejudice about me that he did at first, he would not have found my propositions so strange, and would not have drawn such consequences from them.

In conscience I believe that I have met M. Arnauld's objection, and I am very happy to see that the aspect he chose as one of the most shocking is so little so in my opinion. […]

I am with devotion My Lord the most humble and most obedient servant of Your Supreme Highness Leibniz.

8. Arnauld to Leibniz, 13 May 1686

Monsieur, I thought that I should write directly to you to ask your pardon for giving you cause to be upset with me, by using unduly harsh terms to say what I was thinking about one of your views. […] I shall simply tell you the difficulties I still have with this proposition: "The individual concept of each person contains once for all everything that will ever happen to him." It seemed to me to follow from this that the individual concept of Adam contained how many children he would have, and the individual concept of each of these children everything that they would do, and all the children they would have and so on, from which I thought it could be inferred that God was free to create or not create Adam, but that supposing that he willed to create him, everything that has happened since to humankind must have happened or must happen by a fatal necessity, or at least that God has no more freedom with respect to all this, supposing that he willed to create Adam, than not to create a nature capable of thinking, supposing that he willed to create me.

It does not seem to me, Monsieur, that in speaking thus I have confused hypothetical necessity with absolute necessity. For *on the contrary:*

I never speak of anything in this context but hypothetical necessity. But the only thing I find strange is that all human events should be as necessary, by hypothetical necessity, given the single supposition that God willed to create Adam, as it is necessary, by hypothetical necessity, that there was in the world a nature capable of thinking given only that he willed to create me.[...]

2. It is sufficient for me, nevertheless, to know that this is your idea in order for me to conform to it, while I investigate whether this removes the entire difficulty I have above, and this is what I still do not see.

For I agree that God's knowledge of Adam when he resolved to create him contained that of everything that has happened to him, and of everything that has happened and is to happen to his posterity; and if the individual concept of Adam is taken in this sense, what you say about it is very certain.

I admit similarly that his volition to create Adam was not detached from the one he had with regard to what happened to him, and with regard to all of his posterity.

But it seems to me that after this the question remains (and it is this that generates my difficulty) whether the link between these objects (I have in mind Adam on the one hand and everything that was to happen both to him and to his posterity on the other) is as it is of itself independently of all the free Decrees of God, or whether it was dependent on them: that is to say,

[a] if it is only as a consequence of the free Decrees by which God ordained everything that would happen to Adam and his posterity that God knew everything that would happen to Adam and his posterity; or

[b] if there is (independently of these Decrees) between Adam on the one hand, and what has happened and will happen to him and his posterity on the other, an intrinsic and necessary connection.

Without this latter [b], I cannot see that what you say can be true, that "the individual concept of each person contains once for all everything that will ever happen to him," even taking this concept in relation to God.

[*Arnauld's first difficulty*] It seems too that it is on this latter [b] that you insist. For I believe that you suppose that according to our manner of conceiving, possible things are possible before all the free Decrees of God, from which it follows that what is contained in the concept of possible things is contained therein independently of all the free Decrees of God. Now you would have it "that God has found among the possible things a possible Adam accompanied by such and such individual circumstances, and who among other predicates also has that of having in time such and such a posterity." There is therefore according to you a link that is intrinsic, so to speak, and independent of all the free decrees of God between this possible Adam and all the individual persons of his entire posterity, and not only the persons, but in general everything that was to happen to them. Now it is this, Monsieur—I do not dissemble with you—that I find incomprehensible. For it seems to me that you would have it that the possible Adam (whom God chose in preference to other possible Adams) had a link with just the same posterity as the Adam who was created, since according to you as near as I can tell, he is the same Adam considered now as possible and now as created. Now, this being supposed, **here is my difficulty.**

How many men are there who have entered the world only by very free Decrees of God. like Isaac, Samson, Samuel, and so many more? So when God knew them jointly with Adam, this was not because they were contained in the individual concept of the possible Adam independently of

the Decrees of God. It is therefore not true that all the individual persons within Adam's posterity were contained in the individual concept of possible Adam, since they would have had to be contained in it independently of the divine Decrees.

The same thing can be said of an infinity of human events that have occurred through very particular orders of God, like among other things the Jewish and Christian Religion, and above all the Incarnation of the divine word. I don't know how anyone could say that all of this was contained in the individual concept of the possible Adam—who is considered as possible before having everything he is conceived as having under this concept independently of the divine Decrees.

[*Arnauld's second difficulty*] Furthermore, Monsieur, I do not know how, taking Adam as an example of a singular nature, one can conceive many possible Adams. It is as though I conceived many possible me's which is surely inconceivable. For I cannot think of me without considering myself as a singular nature so distinguished from everything else, existent or possible, that I can as little conceive different me's as conceive a circle that does not have all its diameters equal. The reason is that these different me's would be different from one another; otherwise there would not be many me's. There would therefore have to be one of these me's that was not me, which is a manifest contradiction.

Now, Monsieur, **let me transfer to this me what you say about Adam**, and judge for yourself if this would be tenable. Among the possible beings God found in his ideas many me's of which one has for its predicates having many children and being a physician, and another living celibate and being a Theologian. And since he has resolved to create the latter, the me that now is contains in his individual concept living celibate and being a Theologian, whereas the former would have contained in his individual concept being married and being a physician. Isn't it clear that there would be no meaning in this discourse, because my me necessarily being such and such an individual nature, which is the same thing as having such and such an individual concept, it is as impossible to conceive contradictory predicates in the individual concept of me, as to conceive a me different from me? Whence we must conclude it seems to me that since it is impossible that I should not always have remained me, whether I was married or lived as a celibate, the individual concept of my me contained neither the one nor the other of these two states—as we may rightly conclude that this marble square is the same whether it is at rest or is being moved; therefore neither rest nor motion is contained in its Individual concept.

This is why, Monsieur, it seems to me that I must regard as contained in the individual concept of me only what is such that I would no longer be me if it were not in me; and that everything that is, on the contrary, such that it could be in me or not be in me without my ceasing to be me, cannot be considered as being contained in my individual concept, though it may be by the order of God's providence, which does not change the nature of things, that it cannot happen that this is not in me. This is my thinking, which I believe conforms to everything that has always been accepted by all the Philosophers of the world. […]

[*Further difficulties: the plurality of Adams and the reality of simply possible substances*] I also find many uncertainties in the manner in which we usually represent God to act. We imagine that before willing to create the world, he envisaged an infinity of possible things, from which he chose some and rejected the rest: many possible Adams, each with a great succession of persons and events with which he has an intrinsic link. And we suppose that the link of all these other things with one of these possible Adams is entirely similar to the one we know the created Adam had with all of his posterity; this makes us think that the latter is the one whom God chose from all the possible

Adams, and that he did not will all the rest. But without insisting on what **I** have already said—that, taking Adam as an example of a singular nature, it is as little possible to conceive many Adams as to conceive many me's—I honestly admit that I have no idea of these purely possible substances, that is, the ones that God will never create. And I am strongly drawn to believe that they are chimeras we frame and that everything we call possible substances, purely possible, can be nothing whatever but God's omnipotence, which, being a pure act, does not allow there to be any possibility within it. But it can be conceived in the natures he has created, because, since they are not by their essence being itself, they are necessarily composed of potency and act: this enables me to conceive them as possibles, which I can also do with an infinity of modifications that are in the power of these created natures, such as the thoughts of intelligent natures and the shapes of extended substance. But unless I am badly mistaken, there is no one who would dare to say that he has the idea of a possible, purely possible, substance. For, speaking for myself, I am convinced that although there is much talk of these purely possible sub- stances, nevertheless none of them is ever conceived but under the idea of one or the other of those that God has created. It therefore seems to me that one could say that beyond the things God has created or is to create, there is no passive possibility but only an active and infinite potency. […]

I am, Monsieur, Your very humble and very obedient servant, Antoine Arnauld.

14. Leibniz to Arnauld, Hanover, 14 July 1686

Monsieur, As I defer greatly to your judgment, I was very happy to see that you had moderated your reproof after having seen my explanation of that proposition which I think important, and which seemed strange to you; "that the individual concept of each person contains, once for all, everything that will ever happen to him**.**' At first you had drawn this consequence from it, that from the single supposition that God resolved to create Adam, all the rest of the human occurrences that happened to Adam, and to his posterity. would have followed by a fatal necessity, without God any longer having had the freedom to dispose of them, any more than he can refrain from creating a nature capable of thinking after having made the resolution to create me.

To this I had replied that since God's plans concerning the whole universe are linked to one another, in conformity with his supreme wisdom, he made no resolution with regard to Adam without making it with regard to everything that has some link with him. It is therefore not because of the resolution made with regard to Adam, but because of the resolution made at the same time with regard to all the rest (in which the one made with regard to Adam embraces a perfect relationship), that God's mind was made up about all human occurrences. In this it seemed to me that there was no fatal necessity, and nothing contrary to God's freedom, any more than there is in the generally accepted hypothetical necessity with regard to God himself, of executing what he has resolved.

You agree, Monsieur, in your reply, about this link with divine resolutions which I had proposed, and you even have the sincerity to admit that you had at first taken my proposition entirely otherwise, "because we are not for example used to" (these are your words) "considering the specific concept of a sphere in relation to what it is represented in the Divine understanding, but in relation to what it is in itself," and that you had thought "that this is also how it is with regard to the individual concept of each person." (As for me I had thought that the full and comprehensive concepts are represented in the divine understanding as they are in themselves!) "But now that you know that this is my idea, that is sufficient for you to conform to it, and examine whether it resolves the difficulty." It therefore seems that you recognized that my position

concerning full concepts as they are in the Divine understanding, explained in this wav is not only innocent, but even that it is certain. For these are your words:

"I agree that God's knowledge of Adam, when he resolved to create him, contained that of everything that has happened to him, and of everything that has happened and is to happen to his posterity; and if the individual concept of Adam is taken in this sense, what you say about it is very certain." We shall see presently what the difficulty consists in that you still find here. But I shall say a word about the ground of the difference that arises at this point between the concepts of species and those of individual substances in relation to the Divine will rather than in relation to the simple understanding. It is that the most abstract species concepts comprehend only necessary or eternal truths, which do not depend on Divine Decrees (whatever the Cartesians may say about this; you yourself do not seem to be concerned about it at this point) but the concepts of individual substances that are complete and capable of distinguishing their subject, and consequently embrace contingent or factual truths and Individual circumstances of time, place, and other things, must also embrace in their concept, taken as possible, the free Decrees of God, also taken as possible, because these free Decrees are the principal sources of existences or facts, whereas essences are in the Divine understanding before the will is considered.

[*Leibniz's account of Arnauld's first difficulty*] This will help us understand everything else better, and meet difficulties that still seem to remain in my explanation. For this is how you continue. Monsieur: "but it seems to me that after this the question remains, and it is this that generates my difficulty, whether the link between these objects (I have in mind Adam and human occurrences) is as it is of itself independently of all the free Decrees of God, or whether it is dependent on them. That is to say, if it is only because of the free Decrees by which God ordained everything that would happen to Adam and his posterity, that God knew everything that would happen to them; or if there is independently of these Decrees between Adam on the one hand, and what has happened and will happen to him and his posterity on the other, an intrinsic and necessary connection." It appears to you that I will choose the latter alternative, because I have said "that God found among the possibles an Adam accompanied by such and such individual circumstances, who among other predicates also has that of having in time such and such a posterity." Now you suppose that I will agree that the possibles are possibles before all the free decrees of God. Presupposing therefore this explanation of my view on the basis of the latter alternative, you judge that it is saddled with insurmountable difficulties: "for there are," as you say with good reason, "an infinity of human events that have occurred through very particular orders of God, like among other things the Jewish and Christian religion, and above all the Incarnation of the Divine Word. And I do not know how one could say, that all this" (which happened by very free Decrees of God) "was contained in the individual concept of the possible Adam—who is considered as possible before having everything he is conceived as having under this concept, independently of the Divine Decrees."

[*Leibniz's response to Arnauld's first difficulty*] I wanted to recount your difficulty carefully, Monsieur, and here is how I hope to meet it fully to your own satisfaction. For it is surely necessary that it can be solved, since it cannot be denied that there really is such a full concept of the Adam, accompanied by all his predicates, and conceived as possible, [a concept] that God knows before resolving to create him. as you seemed to agree; otherwise he would resolve before knowing enough. I therefore believe that the dilemma of the double explanation that you propose allows of some middle position; and the link I conceive between Adam and human occurrences is *intrinsic,* but it is not *necessary* independently of God's free decrees; because the free Decrees of God, taken

as possible, enter into the concept of the possible Adam—these same decrees once they become actual being the cause of the actual Adam. I agree with you, against the Cartesians, that the possibles are possibles before the actual Decrees of God, but not without sometimes presupposing the same decrees taken as possible: for the possibilities of individuals or of contingent truths contain in their concept the possibility of their causes, namely the free decrees of God: in which they differ from the eternal truths or possibilities of species that depend only on the understanding of God, without presupposing his will, as I have already explained above.

That might suffice; but to make myself better understood I shall add that I conceive an infinity of possible ways of creating the world, according to the different plans God could have formed; and that each possible world depends on certain principal plans or ends of God, which are proper to it: that is. on certain primitive free Decrees (conceived within a scheme of possibility) or laws of the general order of that of the possible universes to which they are suitable and whose concept the determine, as well as the concepts of all the individual substances that are to enter the same universe—everything being in the *order,* up to miracles themselves, although these are contrary to some subordinate maxims or laws of nature. So all human events could not fail to happen as they have in fact happened, supposing the choice of Adam to have been made, but not so much because of the individual concept of Adam, although this concept contains them, as because of the plans of God which also enter into this individual concept of Adam, and determine that of this entire universe, and thereupon both that of Adam and that of all other individual **s**ubstances in this universe—each individual substance expressing the whole universe of which it is a part, according to a certain relation, by the connection that holds among all things, because of the linkages among God's resolutions or plans.

[*Leibniz's account of Arnauld's second difficulty*] I discover that you put forward still another objection, Monsieur, which is not derived from consequences apparently contrary to freedom, like the objection I have just solved, but from the thing itself, and from the Idea we have of an individual substance. For since I have the idea of an individual substance, that is. that of me, it seems to you that that is where one must seek what is to be said about an individual concept, and not in the manner in which God conceives individuals. And as I have only t**o** consult the specific concept of a sphere to judge that the number of feet in the diameter is not determined by this concept, so, say you, I find clearly in the individual concept I have of myself that I will be myself whether or not I take the trip I have projected.

[*Leibniz's response to Arnauld's second difficulty: the predicate's inclusion in the subject*] *To* respond distinctly to this, I agree that the connection, though it may be certain, is not necessary, and that I am free to take or not take this trip. For though it may be contained in my concept that I will take it, it is also contained in it that I will take it freely. And there is nothing in me of all **that** can be conceived within a scheme of generality, or essence, or species concept or incomplete concept from which it may be inferred that I will take it, whereas from the fact that I am a man, it may be inferred that I am capable of thinking; and it, whereas from the fact that I am a man, it may be inferred that I am capable of thinking; and consequently if I do not take the trip, this will not conflict with any eternal or necessary truth. Nevertheless since it is certain that I will take it, there surely must be some connection between myself who is the subject and the execution of the trip which is the predicate (for the concept of the predicate is always in the subject in a true proposition. There would therefore be a falsehood if I did not take it, which would destroy my individual or complete concept, or what God conceives or conceived of me, even before resolving to create me: for this concept embraces within a scheme of possibility existences or factual truths or decrees of

God on which the facts depend. But without going this far, if it is certain that A is B then what is not B is not A either. Therefore, if A means Me, and B means he who will take this trip, one may conclude that he who will not take this trip is not me; and this conclusion may be derived simply from the certainty of my future trip, with no need to impute ft to the proposition in question.

I also agree that to judge of the concept of an individual substance it **is** good to consult the one I have of my own self, as one must consult the specific concept of a sphere to judge of its properties, although there is a big difference. For the concept of *Me* in particular, and of every other individual substance, is infinitely more extensive and difficult to comprehend than a species concept, like that of the sphere, which is only incomplete, and does not contain all the circumstances that are necessity to arrive at a certain sphere. It is not enough that I feel myself a substance that thinks. It would be necessary to conceive distinctly what distinguishes me from among all other possible minds, but I have only a confused experience of that. On this account, although it is easy to judge that the number of feet in the diameter is not contained in the concept of the sphere in general, it is not so easy to judge certainly (although one can judge it probably enough) whether the trip I plan to take is contained in my concept. Otherwise it would be as easy to be a prophet as to be a geometer. Nevertheless just as experience cannot enable me to know an infinity of insensible things in bodies of which the general consideration of the nature of body and motion can convince me, so, although experience may not make me feel everything that is contained in my concept, I can know in general that everything that belongs to me is contained in it, by the general consideration of the individual concept.

To be sure, since God can and in fact does form this complete concept from which one can give an account of all the phenomena that come to me, it is therefore possible; and it is the true complete concept of what I call me, in virtue of which all my predicates happen to me as their subject. This could therefore be proved just as well without mentioning God, except as much as is needed to testify to my dependence. But this truth is expressed with greater force when the concept in question is derived from the divine knowledge as from its source. I grant that there are many things in the divine knowledge that we cannot comprehend, but it seems to me that there is no need to delve into them to resolve our question. Moreover, if in the case of some person and even this universe, something turned out otherwise than it does, nothing stands in the way of saying that it would be another person or another possible universe that God had chosen. It would therefore truly be another. There must also be an a priori reason, independent of my experience, that makes it true to say that it is I who has been to Paris, and that it is still I and not someone else who is now in Germany; and consequently the concept of me must link or comprehend these different states. Otherwise one could say that this is not the same individual, although it appears to be. And in fact some philosophers who did not sufficiently know the nature of substance and of indivisible beings, or beings *per se,* have thought that nothing remains truly the same; and it is because of this among other things that I judge that bodies would not be substances, if there were nothing in them but extension.

[*Leibniz's response to two of Arnauld's remarks*] I believe. Monsieur, that I have now met the difficulties that touch on the principal proposition. But as you make further weighty remarks on some incidental expressions I had used, I shall try to explain myself. I had said that the supposition from which all human occurrences can be deduced is not that a vague Adam is created, but that such and such an Adam is created determinate in every circumstance, chosen from an infinity of possible Adams. You make two remarks about this that are worth considering—the one against the plurality of Adams, the other against the reality of simply possible substances.

[*Leibniz's response to Arnauld's remark about the plurality of Adams*] As tor the first point, you say with good reason that it is as little possible to conceive many possible Adams, taking Adam for a singular nature, as to conceive many ME's. I agree. But then again, in speaking of many Adams. I was not taking Adam as a determinate individual, but as some person conceived within a scheme of generality in circumstances that appear to us to determine Adam down to an individual, but which truly do not determine him enough: as when one understands by Adam the first man put by God in a garden of pleasure, which he leaves through sin, from whose side God removes a woman (for one must not name Eve, or Paradise, taking them as determinate individuals; otherwise this would no longer be within a scheme of generality): but all that does not sufficiently determine; and along these lines there would be many disjunctively possible Adams, many individuals whom all of it would fit. That is true whatever finite number of predicates incapable of determining all the rest one takes. But what determines a certain Adam must contain absolutely all his predicates; and it is this complete concept that determines the scheme of generality upon an individual. Furthermore, so far am I from the plurality of the same individual that I am even fully persuaded of what St. Thomas had already taught with regard to spiritual substances, which I hold to be general, namely that it is not possible that there should be two individuals entirely similar, or differing in number only.

[*Leibniz's response to Arnauld's remark about the reality of simply possible substances*] As for the reality "of purely possible substances, that is, the ones that God will never create," you say, Monsieur, that you are strongly inclined to believe that they are chimeras; to which I am not opposed if you mean, as I believe, that they have no other reality than that which they have in the Divine understanding, and in the active power of God. However, you see from this, Monsieur, that we are forced to have recourse to the Divine knowledge and power to explain them well. I also find what you 1say next very solid, "that no purely possible substance is ever conceived, but under the idea of one" (or by the ideas included in one) "or the other of those that God has created." You also say: "We imagine that before creating the world God envisaged an infinity of possible things, of which he chose some and rejected the rest: many possible Adams" (first men), "each with a great succession of persons and events with which he has an intrinsic link. And we suppose that the link of all these other things with one of these possible Adams" (first men) "is entirely similar to the one the created Adam had with all of his posterity; this leads us to think that the latter is the one whom God chose from all the possible Adams, and that he did not will all the rest" Here you seem to acknowledge, Monsieur, that these thoughts, which I avow as mine (provided that the plurality of Adams and their possibility are understood according to the explanation I have given, and that all this is taken according to our manner of conceiving some order in the thoughts or operations we attribute to God), enter the mind quite naturally when one thinks a little about this matter, and even cannot be avoided; and perhaps displeased you only because you supposed that they could not be reconciled with the free Decrees of God. Whatever is actual can be conceived as possible; and if the actual Adam will have such and such posterity in time, the same predicate cannot be denied to this Adam conceived as possible; especially as you agree that God envisages all these predicates in him, when he determines to create him. So they belong to him; and I cannot see that what you say about the reality of possibles runs counter to it. In order to call something possible it is enough for me that a concept can be formed of it, even if it would only be in the divine understanding, which is, so to speak, the land of possible realities. So in speaking of possibles, I am content that we can form true propositions about them, as we can judge, for example, that a perfect square implies no contradiction, even if there were no perfect square in the

world. And if we wanted to reject pure possibles absolutely, we would destroy contingency and freedom. For if there were nothing possible but what God has in fact created, what God creates would be necessary; and if God willed to create something he would not be able to create anything but that, without having freedom of choice.

[*Summary of the terrain covered; affirmation of the predicate's inclusion in the subject; articulation of the principle of sufficient reason*] All this makes me hope […] that when all is said and done your thoughts do not end up so far from mine as they first appeared to be. You approve, the linkage of God's resolutions; you acknowledge the principal proposition as certain in the sense I have given it in my reply. You had doubted only whether I was making the link independent of God's free decrees; and you had good reason to be troubled about this. But I have shown that it depends on these Decrees according to me; and that it is not necessary even though it is intrinsic**.** You insisted on the disadvantage there would be to saying that if I do not take the trip I am to take. I will not be me: and I have explained how this might and might not be said. Finally. I have given a decisive reason, which to my mind will do for a demonstration; it is that always, in every true affirmative proposition**,** necessary or contingent, universal or singular, the concept of the predicate is included in some way in that of the subject, the predicate is in the subject; or I do not know what truth is. Now I do not ask any further link here than that which is found on the side of the thing, between the term**s** of a true proposition: and it is only in this sense that I say that the concept of the individual substance contains all its events and all its denominations, even those commonly called extrinsi**c** (that is, the ones that belong to it only in virtue of the general connection of things and because it expresses the whole universe in its manner), since there must always *be some foundation for the connection of the terms of a proposition, which must be found in their concepts.* That is my great principle with which I believe that all philosophers must agree, one of whose corollaries is the common axiom that nothing happens without a reason that can always be provided, why the thing turned out this way rather than otherwise, even though this reason often inclines without necessitating; a perfect indifference being a chimerical or incomplete supposition. It can be seen that from the principle just mentioned, which is so manifest, I derive surprising consequences; but this is only because people are not used to pursuing assiduously enough what they know most clearly.

Moreover, the proposition that was the occasion of this whole discussion is very important and deserves to be established firmly. For it follows that *every individual substance expresses the universe completely*; *in its manner, and under a certain relation,* or, so to speak, on the basis of **the point of view** from which it looks at it; and that its following state is a consequence (although free and contingent) of its previous state, as though there were nothing but God and it in the world Thus each individual substance or complete being is like a world apart, independent of every other thing but God. There is nothing so powerful for demonstrating not only the indestructibility of our soul but even that it always retains in its nature the traces of all its previous states, with a virtual memory independent of the body, which can always be aroused, since it has consciousness, and knows in itself what everyone calls **me:** this renders it susceptible of moral qualities, and of punishment and reward, even after this life. For immortality without memory would be useless. But this independence does not prevent commerce between substances. For as all created substances are a continual production of the same supreme being, according to the same plans, and express the same universe or the same phenomena, they agree exactly among themselves, and this leads us to say that one acts on another, because one expresses more distinctly than the other the cause of or reason for the changes, somewhat as we attribute motion to the vessel rather than to the whole sea, and rightly; even though speaking abstractly another hypothesis about motion could be

maintained, motion in itself and in abstraction from the cause always being something relative. It is thus in my opinion that commerce between created substances must be understood, and not *by a real physical influence or dependence,* which can never be distinctly conceived.

[*Leibniz's hypothesis of concomitance, his solution to the mind-body problem*] This is why. when what is in question is the union of soul and body, and the action or passion of a mind with regard to another creature, many have been forced to agree that their immediate physical commerce is inconceivable. Nevertheless *the hypothesis of occasional causes* [the occasionalism that was articulated by Malebranche] will not, it seems to me, satisfy a philosopher. For it introduces a kind of continual miracle, as though God at each moment were changing the laws of bodies, on occasion of the thoughts of minds; or changing the regular course of the thoughts of the soul, by exciting other thoughts in it on occasion of the movements of bodies; and in general as though God involved himself otherwise, ordinarily, than by preserving each substance in its course, and in the laws established for it. It is therefore only *the hypothesis of concomitance or of the accord of the substances among themselves,* that explains everything in a manner that is conceivable and worthy of God, and that is even demonstrative and inevitable to my mind, according to the proposition we have just established. It also seems to me that it accords better with the freedom of rational creatures than *the hypothesis of impressions,* or that *of occasional causes.* God first created the soul in such a way that ordinarily he does not need these changes; and what happens to the soul is born to it from its own depths, with no need on its part to accommodate itself subsequently to the body, any more than the body to the soul. Each following its laws and the one acting freely, the other without choice, they come together in the same phenomena. The soul nevertheless is still the form of its body, because it expresses the phenomena of all other bodies following the relation to its own.

One will perhaps be more surprised that I deny the immediate physical action of one bodily substance on the other, which nevertheless seems so clear. But it must be taken into consideration not only that others have already done so, but that this is a play of the imagination rather than a distinct conception. If the body is a substance, and not a simple phenomenon, like the rainbow, or a being united by accident or aggregation like a heap of stones, it cannot consist in extension, and there must necessarily be conceived in it something called substantial form, which corresponds in some way to what is called the soul. I have finally been convinced of this, as though in spite of myself, after having been far removed from it earlier. Nevertheless, however much I approve the Scholastics in this general and so to speak metaphysical explanation of the principles of bodies. I am as corpuscularian as one can be in the explanation of particular phenomena; and it is to say nothing to affirm qualities or forms of them. One must always explain nature mathematically and mechanically, provided that one knows that the principles themselves, or laws of mechanics or force, do not depend only on mathematical extension, but on a few metaphysical reasons.

After all this I believe that now the propositions contained in the *Summary* you have been sent, Monsieur, will appear not only more intelligible, but perhaps even more solid and important, than could have been judged at first. […]

But it is time to end this letter, already too long, after I have declared with sincerity that I shall always be very honored by the least marks of your good will, and that I shall always be with a very ardent passion, and a very lofty esteem. Monsieur, your very humble and very obedient servant Leibniz.

17. Arnauld to Leibniz [?], 28 September [1686]

[I] confess honestly to you that I was satisfied with the way you explained what had shocked me

at first concerning the concept of the individual nature. […] Above all, I was struck by this reason, that in every true affirmative proposition, necessary or contingent, universal or singular, the concept of the attribute is included in' some way in that of the subject: the predicate is in the subject. […]

I would rather beg you to clarify for me two things in your last letter that seem to me worth considering but which I do not comprehend very well.

[*Arnauld's question about the hypothesis of concomitance*] The first is what you mean by "the hypothesis of the concomitance and the agreement of substances with one another," by which you maintain that what happens in the union of soul and body, and the action or passion of a mind with regard to another creature, is to be explained. For I cannot make sense of what you say to explain this thought, which according to you agrees neither with those who believe that the soul acts physically on the body and the body on the soul, nor with those who believe that God alone is the physical cause of these effects, and that the soul and the body are only their occasional causes. "God," you say, "created the soul in such a way that ordinarily he does not need these changes, and what happens to the soul is born to it from its own depths; it has no need to agree subsequently with the body, any more than the body with the soul: each following its laws, and the one acting freely, and the other without choice, they come together in the same phenomena."

Some examples will help you make your thought better understood.

[*The example of pain*] Someone wounds me in the arm. With regard to my body this is only a bodily motion, but my soul immediately has a sensation of pain, which it would not have without what happened to my arm. Someone asks what the cause of this pain is. You would not have it that my body has acted on my soul, or that it was God who on the occasion of what happened to my arm immediately formed the sensation of pain in my soul. *Therefore you must believe that it is the soul itself that formed it, and this must be what you mean when you say that what happens in the soul on the occasion of the body is born to it from its own depths.* St. Augustine was of this opinion, because he believed that bodily pain was nothing but the sadness the soul had because its body was in poor condition. But what reply can be given those who object: That then the soul would have to know that its body was in poor condition before being sad about it, whereas it seems that it is the pain that informs it that its body is in poor condition? […]

[*Arnauld's questions about the nature of the forms of bodily substances*] The second thing I would desire to have clarified is that you say: "That in order that the body or matter not be a simple phenomenon like the rainbow, or a being united by accident or aggregation like a heap of stones, it cannot consist in extension, and there must necessarily be in it something called substantial form, which corresponds in some way to what is called the soul." There are many things to ask about that.

1. Our body and our soul are two really distinct substances. Now I cannot imagine that when a substantial form is placed in the body in addition to extension, they are two distinct substances. I therefore cannot see that this substantial form has any relation to what we call our soul.

2. This substantial form of the body would have to be either extended and divisible or nonextended and indivisible. If we say the latter, it seems that it would be as *indestructible* as our soul. And if we say the former[4] it seems that we gain thereby nothing more toward making bodies one *per se* than if they consisted only in extension. For it is the divisibility of extension into an infinity of parts that makes it hard to conceive its unity. Now this substantial form will not remedy that if it is as divisible as extension itself.

[*The example of the marble tile*] 3. Is it the substantial form of a marble tile that makes it one? If

it is, what does this substantial form become when [the tile] ceases to be one because it has been broken in two? It is annihilated, or it has become two. The former is inconceivable if the substantial form is not a manner of being but a substance. And it cannot be said to be a manner of being or modality, since the substance of which the form was the modality would have to be extension, which apparently is not your position. And if this substantial form became two from being one, why should we not say as much of extension alone without this substantial form?

4. Do you give extension a general substantial form, such as some Scholastics acknowledged, which they called the form of bodiliness; or do you hold that there are as many different substantial forms as there are differing bodies, different in species when they are of bodies different in species?

5. Wherein do you place die unity accorded the earth, the sun**,** the moon, when it is said that there is only one earth we live on, only one sun that illumines us, only one moon that turns in so many days around the earth? Do you believe that this makes it necessary for the earth, for example, composed of so many heterogeneous parts, to have a substantial form that is proper to it and gives it this unity? There is no sign that you believe this. I will say the same about a tree, a horse. And I will move beyond them to all the mixtures. For example, milk is composed of serum, cream, and that which curdles. Does it have three substantial forms, or does it have only one?

6. Finally it will be said that it is not worthy of a philosopher to admit entities of which one has no clear and distinct idea, and that one has none of these substantial forms. And that moreover according to you they cannot be proved by their effects, since you grant that it is by the corpuscular philosophy that all the particular phenomena of nature must be explained, and that to instance these forms is to say nothing. […]

I would very much like to know whether you have not brought to the pitch of perfection two machines you devised when you were in Paris: one for Arithmetic, which made a much better impression than M. Pascal's, and the other a watch that kept perfect time. I am yours faithfully.

20. Leibniz to Arnauld, Hanover, 8 December 1686

[…] As for the two difficulties you find in my letter, the one concerning *the hypothesis of concomitance* or of the agreement of substances with one another, and the other concerning *the nature of the forms of bodily substances,* I admit that they at worthy of consideration, and if I could completely settle them I would believe I could decipher the greatest secrets of universal nature. But it is something to advance a certain distance.[2]

[*Leibniz's response to Arnauld's question about the hypothesis of concomitance*] And as for the first I find that you yourself explicate well what you had found obscure in my thought concerning *the hypothesis of concomitance; for* when the soul has a sensation of pain at the same time as the arm is injured, I indeed believe, as you say, Monsieur, that the soul itself forges this pain, which is a natural consequence of its state or its concept; and I am surprised that St. Augustine, as you observed, seems to have recognized the same thing when he says that the pain the soul has on these occasions is nothing but a sadness that accompanies the poor condition of the body. Indeed that great man had very solid and very profound thoughts. But (one will say) how does it know this poor disposition of the body? I answer that it is not by any impression or action of bodies on the soul, but because the nature of every substance bears a general expression of the entire universe, and because the nature of the soul bears more particularly a more distinct expression of what is happening now with regard to its body. This is why it is natural for it to register and know the accidents of its body by its own [accidents]. […]

[*Leibniz's response to Arnauld's questions about the nature of the forms of bodily substances*] I would like to be able to explain myself so neatly and decisively on the other question that concerns substantial forms.

The first *difficulty* you point to, Monsieur, is that our soul and our body are two really distinct substances; therefore, it seems that the one is not the substantial form of the other. I answer that in my view our body in itself, taken apart from the soul, or the *corpse*, can be called one substance only by misuse, like a machine or like a heap of stones, which are only beings by aggregation. For a regular or irregular arrangement accomplishes nothing toward substantial unity. […]

[*The example of the silkworm*] As for *the second difficulty,* I agree that the substantial form of the body is indivisible; […] I agree too that every substantial form, indeed every substance, is indestructible. and even ingenerable […]. They can therefore come into being only by a creation. And I am strongly inclined to believe that all generations of animals lacking reason, which do not merit a new creation, are only transformations of another animal already alive but sometimes imperceptible on the model of the changes in **a silkworm and the like**: nature being wont disclose its secrets in some examples that it hides in other cases. So the brute souls would all have been created with the beginning of the world, after the fecundity of seeds mentioned in Genesis. But the rational soul is created only at the time of the formation of its body, being completely different from the other souls we know, because it is capable of reflection, and imitates on a small scale the divine nature.

[*Response to the example of the marble tile: the counter examples of the two diamonds and the pond of fish*] *Thirdly* I believe that a marble tile is perhaps only like a heap of stones, and thus cannot qualify as a single substance, but as a collection of many. For let us suppose that there are two stones, for example, the diamond of the grand Duke, and that of the grand Mogul: someone could assign a single collective name to the two, and say that it is a pair of diamonds, even though they are a long way from each other. But no one will say that these two diamonds compose one substance. Now more or less comes to nothing here. So bring them closer to each other, even make them touch: they will not be any more substantially united thereby. And if after they touch some other body were adjoined to them fit to prevent their separation, for example if they were set in a single ring, all this would only make what is called one by accident. For it is as though by accident that they are forced to move together. I therefore hold that a marble tile is not a single complete substance, any more than the water of a pond with all the fish in it would be (even if all the water with all those fish were frozen)or, again a flock of sheep, even if the sheep were linked together so that they could only move in lockstep, and one of them could not be touched without the others crying out. There is as much difference between substance and such a being as there is between a man and a community, like a people, army, society, or college, which are moral beings in which there is something imaginary, and dependent on the fiction of our mind. Substantial unity requires a being that is complete, indivisible, and indestructible, since its concept embraces everything that that is to happen to it, which cannot be found either in shape or in motion (both of which embrace something imaginary, as I could demonstrate) but rather in a soul or substantial form, on the model of what is called *me*.

These are the only true complete beings […] Now the *me* mentioned above, or what corresponds to it in each individual substance, cannot be made or unmade by the approach or separation of parts, which is purely external to what makes a substance. I cannot say in abstraction if there are true bodily substances other than those that are animated; but at least souls serve to give us some knowledge of the others by analogy. All this may help clarify the *fourth* difficulty; for

without troubling myself about what the scholastics called the form of bodiliness, I bestow substantial forms on all bodily substances united more than mechanically.

Bu *fifthly* if I am asked in particular what I say about the sun, the globe of the earth, the moon, trees and similar bodies, and even beasts, I cannot be absolutely sure whether they are animated, or at least substances, or simply machines or aggregates of many substances. But at least I can say that if there are no bodily substances as I would have them, it follows that bodies will only be true phenomena, like the rainbow. For not only is the *continuum* divisible to infinity; every part of matter is actually divided into other parts, as different from one another as the two diamonds mentioned; and since this goes on forever, one will never arrive at something of which it can be said, "Here truly is one being." except when one finds animated machines whose soul or substantial form makes substantial unity, independent of the external union of contact. And if there is none, it follows that outside of man there would be nothing substantial in the visible world.

Sixthly, as the concept of individual substance in general that I have given is as clear as that of truth, that of bodily substance will be too, and consequently that of substantial form. But even if it were not, we are forced to admit many things the knowledge of which is not very clear and distinct. I hold that that of extension is still less so: witness the strange difficulties concerning the composition of the continuum. It can even be said that *there is no fixed and precise shape in bodies, because of the actual subdivision of the parts*. So bodies without doubt would be something only imaginary and apparent, if there were only matter and its modifications. Nevertheless it is pointless to make mention of the unity concept or substantial form of bodies when the question is to explain the particular phenomena of nature, as it is pointless for geometers to examine the difficulties concerning the composition of the continuum when they are working at solving some problem. These things remain important and worth considering in their place. All the phenomena of bodies can be explained mechanically, or by the corpuscular philosophy, following certain principles of mechanics set down with no concern about whether there are souls or not. But in the last analysis *the* principles of physics and mechanics itself, it turns out that these principles cannot be explained by mere modifications of extension, and the nature of force already requires something else. […]

I am with an impassioned zeal Monsieur your etc. Leibniz.

21. Arnauld to Leibniz, [?], 4 March 1687

It has been a long time. Monsieur, since I received your letter, but I have had so much to do in the meantime that I have not been able to answer it sooner.

[*Arnauld's reaction to Leibniz's response to his question about the hypothesis of concomitance*] I do not comprehend well, Monsieur, what you mean by this "more distinct expression that our soul bears of what is happening now with regard to its body,**"** and how when my finger is pricked that can let my soul know this pricking before it has the sensation of pain from it. This same more distinct expression, etc., should then let it know an infinity of other things occurring in my body, which it nevertheless does not know, like everything done in digestion and nutrition. […]

[*Arnauld's reaction to Leibniz's response to his questions about the nature of the forms of bodily substances*] As for the Second Difficulty, I presently understand your opinion entirely otherwise than I had earlier. For I supposed you were reasoning in this way. Bodies must be true substances: Now they cannot be true substances unless they have a true unity, or have a true unity unless they have a substantial form; Therefore the essence of bodies cannot be extension, but every body in addition to extension must have a substantial form. To which I had objected that a substantial form that is divisible, as nearly all of them are in the judgment of the partisans of substantial forms, cannot

give a body the unity it would lack without that substantial form.

You agree with this, but you maintain that every substantial form is indivisible, indestructible, and ingenerable, since it can be produced only by a true creation.

From this it follows, (1), that every body that can be divided so that each part remains of the same nature as the whole, like metals, stones, wood air, water, and other liquid bodies, has no substantial form. (2) That plants have none either, since when part of a tree is either planted in the ground or grafted onto another, it remains a tree of the same species it was before. (3) That it will therefore only be animals that have substantial forms. It will therefore according to you only be animals that are true substances. (4) And yet you are not so sure of this that it keeps you from saying

that if brutes have no soul or substantial form, it follows that outside of man there would be nothing substantial in the visible world, because you maintain that substantial unity requires a complete being that is indivisible and naturally indestructible, which can only be found in a soul or substantial form, on the model of what is called me. (5) The upshot of all this is to say that all bodies whose parts are only mechanically united are not substances, but only machines or aggregates of many substances.

I shall begin with this latter, and I tell you frankly that there is nothing here but a dispute over a word. For St. Augustine has no difficulty in recognizing that bodies have no true unity, because unity must be indivisible and no body is indivisible. That there is therefore no true unity but in minds, any more than true *me*. But what do you conclude from this? **"**That there is nothing substantial in bodies that have no soul or substantial form." For this conclusion to be sound, "substance" and "substantial" would have had to be defined previously in these terms: I call "substance" or "substantial" that which has a true unity. But since this definition has not yet been accepted, and there is no Philosopher who does not have as much right to say: I call substance that which is not a mode or a manner of being, and who consequently cannot hold that it is a paradox to say there is nothing substantial in a block of marble, since the block of marble is not the manner of being of another substance, and all one could say is that it is not a single substance, but many substances mechanically joined together. Now this, it seems to me, is a paradox, this Philosopher will say, that there is nothing substantial in what is many substances. He could add that he comprehends still less this, which you say: "that bodies without doubt would be something only imaginary and apparent, if there were only matter and its modifications." For you put only matter and its modifications in everything that has no soul or substantial, indivisible, indestructible, and ingenerable form. And it is only in animals that you admit these sorts of forms. You would therefore be forced to say that all the rest of nature the rest of nature is "something only imaginary and apparent," and you would have all the better reason to say the same thing about all the works of men. […]

[*The example of the worm/silkworm*] For how can you deal with the *worms* [of which], when divided in two, each part moves as before? If fire destroyed one of the houses where a hundred thousand silkworms are being fed, what would become of these hundred thousand indestructible souls? Would they survive separate from all matter like our souls? Again, what became of the souls of the millions of frogs Moses caused to die when he made this plague cease, and of the innumerable number of quail the Israelites killed in the desert, and of all the animals that perished in the flood? There are still other quandaries over the manner in which these souls are found in every brute insofar as they are conceived. Were they in the semen? Were they indivisible and indestructible there? What then happens when the seed falls in vain without any conception? What happens

when male Animals do not approach females during their whole lives? It suffices to have provided a glimpse of these difficulties.

It remains only to speak of the unity the rational soul gives. I can agree that it has a true and perfect unity, and a true me. And that in some way it communicates this unity and this me to the whole composed of the soul and the body that is called man. For although this whole is not indestructible, since it perishes when the soul is separated from the body, it is indivisible in the sense that half a man cannot be conceived. But when the body is considered separately, as our soul does not communicate its *indestructibility* to it, neither, properly speaking, do we see that it communicates either its true unity or its indivisibility to it. For though united to our soul, it is no less true that its parts are only mechanically united to one another, so that it is not a single bodily substance, but an aggregate of many bodily substances. It is no less true that it is as divisible as all the other bodies in nature. Now divisibility is contrary to true unity. Therefore, it has no true unity. But it does have it, say you, through our soul. That is, [the body] belongs to a soul that is truly one—which is not a unity intrinsic to the body, but similar to that of different provinces which, being governed by but a single King, make but one Kingdom.

And yet. true though it be that there is true unity only in the intelligent natures of which each can say *me,* there are nevertheless different degrees within this improper unity suited to the body. For though there is no body taken by itself that is not many substances, there is nevertheless reason to attribute more unity to those whose parts work together toward the same purpose, like a house or a watch, than to those whose parts are only near one another, like a heap of stones, a sack of pistoles: and it is properly only the latter that should be called *aggregates by accident.* Almost all the bodies of nature that we call *one,* like a piece of gold, a star, a planet, are of the first genus, but this is nowhere more apparent than in organized bodies, that is, animals and plants—with no need on that account to give them souls. (And it even appears to me that you do not give them to plants.) For why cannot a Horse or an Orange Tree each be considered as a complete and finished piece of work, as well as a Church or a watch? What does it matter, for them to be called one (with that unity which, to suit the body, had to be different from that which suits spiritual nature), that their parts are united to one another only mechanically, and that they are thus machines? Is this not the greatest perfection that they can have, to be machines so wonderful that only an all-powerful God can have made them? Our body considered alone is therefore one in this way. And the relation it has to an intelligent nature that is united to it and governs it may still add some unity to it, which however is not of the nature of that suited to spiritual natures. […]

I am, Monsieur, Your very humble and very obedient servant. Antoine Arnauld.

23. Leibniz to Arnauld, Göttingen, 30 April 1687

Monsieur, Your letters being considerable benefits to me and marks of your pure liberality, I have no right to request them, and consequently you never reply too late. […]

[*Leibniz's renewed attempt to defend the hypothesis of concomitance*] I do not believe there is a difficulty in what I said, that the soul expresses more distinctly, other things being equal, what belongs to its body, since it expresses the whole universe in a certain sense, in particular according to the relation of other bodies to its own. For it cannot express all things equally: otherwise there would be no distinction between souls. But it does not follow from this that it must perceive perfectly what happens in the parts of its body, since there are degrees of relationship between these parts themselves that are not all expressed equally, any more than external things are. The remoteness of some is compensated by the smallness or other impediments of others; […] The nerves are

parts more amenable to being sensed, and it is perhaps only through them that we perceive others; which apparently happens because the motions of nerves or liquids belonging to them imitate impressions better, and confuse them less. Now more distinct expressions of the soul correspond to more distinct impressions of the body. It is not that the nerves act on the soul, or the other bodies on the nerves, speaking metaphysically; but that the one represents the state of the other by a spontaneous relationship. Again, it must be kept in mind that too many things occur in our body for us to be able to perceive them all separately. But one feels a certain result of them to which one is accustomed: and one cannot distinguish what enters into them, because of the multiplicity; as, when one hears from afar the sound of the sea, one does not distinguish that which each wave makes, though each wave has its effect on our ears. But when a signal change happens in our body, we notice it immediately, and better than external changes not accompanied by a noteworthy change of our organs.

I do not say that the soul knows the pricking before it has the sensation of the pain, except as it knows or confusedly expresses everything, according to the principles already established. But the expression although confused and obscure that the soul has in advance of the future is the true cause of what will happen to it, and of the clearer perception it will have later, when the obscurity is dispelled: the future state being a consequence of the preceding. […]

[*The example of the band of musicians*] Finally, to make use of a comparison, I will say that the case of this concomitance I advocate is like that of many different bands of musicians, or choirs, playing their parts separately, and placed so that they cannot see or even hear one another, which are nevertheless capable of agreeing perfectly by following their notes, each its own, so that anyone hearing them all finds a marvelous harmony in them, much more surprising than if there was a connection between them. It might even happen that someone next to one of these two choirs should judge by the one what the other is doing; and thereby become so habituated (particularly if we supposed that he could hear his own without seeing it, and see the other without hearing it) that, his imagination filling in, he would no longer think of the choir where he is, but of the other one, or only take his as its echo, attributing to the one where he is only certain interludes in which the symphonic rules by which he is judging of the other one do not appear: or attributing to his own certain movements that it gets performed on his side, following certain plans he believes the others are imitating, because of the relation to it that he finds in the continuation of the melody; not knowing that the ones on the other side are still performing something corresponding, following their own plans. […]

[*Further remarks on the nature of the forms of bodily substances*] If the opinion I have that substance requires a true unity were founded only on a definition I had forged contrary to common usage, *this would only be a dispute over words*, were it not that I had thereby noted and distinguished a concept inopportunely neglected by others. But not only have ordinary philosophers taken this term in about the same way, distinguishing between one *per se* and one *per accidens,* form substantial and accidental, compounds imperfect and perfect, natural and artificial, but I take things to a much higher point, and leaving terms aside, I believe that *where there are only beings by aggregation, there will not even be real beings;* for every being by aggregation presupposes beings endowed with a true unity, because it secures its reality only from that of those of which it is composed; so that it will have none at all if each being of which it is composed is again a being by aggregation; or another foundation of its reality must again be sought, which in this way, if the search must forever be continued, can never be found.

I agree, Monsieur, that in all of bodily nature there are only machines (which are often

animated), but I do not agree "that there are only aggregates of substances"; and if there are aggregates of substances, there surely must also be true substances from which all the aggregates result. One must therefore necessarily arrive either at the Mathematical points of which some authors compose extension, or at the Atoms of Epicurus, or M. Cordemoy (which are things you reject along with me), or one must grant that no reality is to be found in bodies, or one must finally recognize some substances in them that have a true unity.

[*The example of the two diamonds; the example of the army*] I have already said in another letter that the composite of the diamonds of the great Duke and the great Mogul can be called a pair of diamonds; but this is only a being of reason, and if they are brought close to one another it will be a being of imagination or perception, that is, a phenomenon. For touching, common motion, concurrence toward the same purpose, make no difference to substantial unity. […] It also seems that what makes the essence of a being by aggregation is only a manner of being of the things it is composed of. For example, what makes the essence of an army is only a manner of being of the men who compose it. This manner of being therefore presupposes a substance whose essence is not a manner of being of another substance. Every machine also presupposes some substance in the pieces it is made of, and there is no multiplicity without true unities.

In a nutshell, I take this identical proposition, which acquires diversity only by emphasis, as an axiom: *what is not truly one being is not truly on being either.* It has always been thought that *one* and *being* are interchangeable things. *Being* is one thing; *beings,* something else. But the plural presupposes the singular; and where there is no being, still less will there be many beings. What can be said more clearly?

I do not say that there is nothing substantial, or nothing but appearance, in things that do not have a true unity; for I agree that they always have as much reality or substantiality as there is true unity in what enters into their composition.

You object Monsieur that it may be of the essence of body not to have a true unity; but then it will be of the essence of body to be a phenomenon stripped of all reality, as a regulated dream would be. For phenomena themselves, like the rainbow or a heap of stones, would be entirely imaginary if they were not composed of beings that have a true unity. […]

I also believe that to wish to confine true unity or substance almost exclusively to man is to be as limited in Metaphysics as those people were in physics who confined the world within a ball; and since true substances are so many expressions of the whole universe, taken in a certain sense, and so many replications of the divine works, it is in keeping with the greatness and the beauty of the workmanship of God (since these substances don't get in one another's way) to make in this universe as many of them as there can be, and as many as higher reasons allow.

The supposition of entirely bare extension destroys all this marvelous variety. Mere mass (if it were possible to conceive it) is as far below a substance that is perceptive and representative of the whole universe, **according to its point of view**, and according to the impressions or rather relations its body receives mediately or immediately from all the rest, as a corpse is below an animal, or rather as a machine is below a man. This is even how the lineaments of the future are formed in advance, and the traces of the past are preserved forever in each thing, and the cause and the effects express each other exactly down to the detail of the least circumstance, though every effect depends on an infinity of causes, and every cause has an infinity of effects […].

The multiplicity of souls (to which I do not under that heading always attribute pleasure or pain) should not cause us trouble, […] Now experience supports this multiplicity of animate things. We find that there is a prodigious quantity of animals in a drop of peppered water; one can put

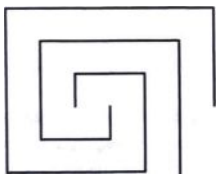
millions of them to death all at once. Now if these animals have souls, it must be said of these souls what can probably be said of the animals themselves, namely that they have already been alive since the creation of the world, and will be until its end; and that generation being apparently only a change consisting in growth, death will only be a change of diminution, making the animal turn back into the nook of a world of little creatures, where it has more limited perceptions, until the order perhaps summons it to resume the stage. The ancients were mistaken to have admitted transmigrations of souls instead of transformations of the same animal, which always keeps the same soul: metempsychoses instead of metaschematisms. But minds are not subject to these revolutions. God creates them when it is time and detaches them from the body by death, since they must always keep their moral qualities, and their remembrance, in order to be citizens of this entirely perfect universal republic of which God is the Monarch, which cannot lose any of its members, and whose laws are higher than those of bodies.

[*Response to the example of the worm*] I grant that the body on its own, without the soul, has only a unity of aggregation; but the reality that remains in it derives from the parts that compose it, which retain their unity. Nevertheless, although it may be that a soul has a body composed of parts animated by souls on their own, the soul or form of the whole is not on that account composed of the souls or forms of the parts. As for [the soul] of an insect that is cut [in two], it is not necessary that the two parts remain animate, although some movement remains in them. At least the soul of the whole insect will remain in only one part; and as in the insect's formation and growth the soul was there from the beginning in a certain part that was already alive, it will also remain after the insect's destruction, in a certain part that is still alive, which will always be as small as it must be to be sheltered from the action of that which rends or scatters the insect's body […].

I agree that there are degrees of accidental unity: that a regulated society has more unity than a confused throng, and that an organized body, or a machine, has more unity than a society. That is, it is more appropriate to conceive them as a single thing, because there is more relation among the ingredients. But in the end all these unities are made complete only by thoughts and appearances, like colors and other phenomena that are still called real. The tangibility of a heap of stones or a block of marble no more proves that it has substantial reality than the visibility of a rainbow proves that it does. And as nothing is so solid that it does not have a certain degree of fluidity, perhaps the block of marble is only a heap of an infinity of living bodies, or like a lake full of fish, although these animals can ordinarily be visually distinguished only in bodies that are half rotten.

[…] Our mind observes or conceives several real substances which have certain modes; these modes embrace relations to other substances, whence the mind takes occasion to join them together in thought, and to put one name in play for all those things taken together: which makes for convenience in reasoning. But we must not make the mistake of making so many substances or truly real beings out of them. That is only for those who dwell on appearances, or who make realities out of all the abstractions of the mind, and conceive number, time, place, motion, shape, sensible qualities as so many beings on their own. Instead I hold that philosophy cannot better be reestablished, and reduced to something precise, than by acknowledging the only substances or complete beings, endowed with a true unity, with their different states, which follow from one another: all the rest being only phenomena, abstractions, or relations.

[*Comparing the example of the heap of stones to the example of the officers of the Dutch East Indies Company*] You will never find any regulated way of making a true substance by aggregation; for example [that] parts all working together toward the same purpose are more fit to compose a true substance than parts that touch. All the officers of the Dutch [East] Indies company will make a real substance much better than a heap of stones; but what is the common purpose but a resemblance, or an order of actions and passions that our mind observes in the different things? If you prefer unity of contact, you will find other difficulties. Perhaps firm bodies have their parts united only by the pressure of surrounding bodies, and of themselves and in their substance have perhaps no more union than a bit of sand: sand without limestone. Why will many links interlaced to make a chain compose a true substance sooner than if they had openings letting one come loose from another? It may be that not one of the parts of the chain touches or even clasps another: and that nevertheless they are so interlinked that they cannot be separated, unless they are grasped in a certain way, as in the figure adjoined.



Will it be said in this case that the substance of the composite of these things is as it were in suspense, and depends on the future ingenuity of the one who would like them separated? Fictions of the mind everywhere, and as long as you do not distinguish what is truly a complete being, or a substance, you will find no place to stop. […]

I am delighted to learn the good state of your health, and wish its continuation with all the zeal and all the passion that make me Monsieur your very humble and very obedient servant, Leibniz.

25. Arnauld to Leibniz, [?], 28 August [1687]

I have to begin by offering excuses for taking so long to respond to your letter of 3 April [sic]. Since that time I have had different illnesses and different things to do, and in addition I have a little trouble applying myself to such abstract things. […]

[*Inquiry about the notion "express"*] I have no clear idea of what you mean by the word "express" when you say "that our soul expresses more distinctly other things being equal what belongs to its body, since it even expresses the whole Universe in a certain sense." For if by this "expression" you mean some thought or some knowledge, I cannot agree that my soul has more thought and knowledge of the motion of lymph in the lymphatic vessels than of the motion of the satellites of Saturn. But if what you call "expression" is neither thought nor knowledge I do not know what it is. And so this can be no use to me in resolving the difficulty I had proposed to you, how my soul can give itself a sensation of pain when someone pricks me while I sleep, since that would require it to have known I had been pricked, and it gains its knowledge only by the pain it feels. […]

[*Further remarks about the indivisible and indestructible substantial forms*] I have more things to say about those indivisible and indestructible substantial forms that you believe must be admitted in all animals, and perhaps even plants, because otherwise matter (which you suppose not to be composed of atoms or mathematical points but to be divisible to infinity) would not be one *per se* but only an aggregate accidentally.

1. I replied to you that it is perhaps essential to matter, which is the most imperfect of all beings, to have no true and proper unity, as St. Augustine believed, and always to be many beings,

and not properly one being; and that this is no more incomprehensible than the divisibility of matter to infinity, which you admit.

You reply that this cannot be, because there cannot be many beings where there is not one being. But how can you employ this reason, which M. de Cordemoy could have believed true but which according to you must be necessarily false, since apart from animate bodies which do not make up a hundred thousand thousandth part of them, all the others, which have no substantial forms according to you, must necessarily be many beings, and not properly one being? It is therefore not impossible for there to be many beings where there is not properly one being.

2. I cannot see that your substantial forms can remedy this difficulty. For the attribute of being that is called "one," taken as you take it with metaphysical rigor, must be essential and intrinsic to what is called "one being". Therefore, if a parcel of matter is not one being but many beings, I cannot conceive that a substantial form, which being really distinguished from it can only give it an extrinsic denomination, can make it cease to be many beings, and become one being by an intrinsic denomination. I understand well enough that this may be a reason to call it one being, when the word "one" is not taken in this metaphysical rigor. But these substantial forms are not needed to give the name "one" to an infinity of inanimate bodies. For is it not speaking properly to say that the sun is one, that the earth we live on is *one*, etc.? So, it is not comprehensible that there is any necessity to admit these substantial forms to give a true unity to bodies, which would otherwise have none.

3. You admit these substantial forms only in animate bodies. Now there is no animate body that is not organized, and no organized body that is not many beings. Therefore, far from your substantial forms keeping the bodies they are joined to from being many beings, [those bodies] must be many beings to be joined to them.

4. I have no clear idea of the substantial forms or souls of brutes. You must be regarding them as substances, since you call them substantial, and say that it is only substances that are truly real beings, among which above all you place these substantial forms. Now I am only acquainted with two sorts of substances—bodies and minds. And it is up to those who would maintain that there are others to show them to us, according to the maxim with which you conclude your letter, "that nothing should be asserted without a foundation." Supposing then that these substantial forms are bodies or minds, if they are bodies they must be extended, and consequently divisible, and divisible to infinity: whence it follows that they are not one being but many beings, as well as the bodies they animate, and that thus they will not have the resources for giving a true unity. But if they are minds their essence will be to think, for this is what I conceive by the word "mind." Now I have trouble comprehending that an oyster thinks, that a worm thinks. Moreover, since you state in this letter that you are not sure that Plants have no soul or life or substantial form, you would also have to be unsure whether plants do not think, since their substantial form if they had one, not being a body because it would not be extended, would have to be a mind, that is, a substance that thinks.

5. The indestructibility of these substantial forms or souls of brutes seems still more untenable to me. I had asked you what became of these souls of brutes when they die or are killed—when, for example, caterpillars are burned, what becomes of their souls. You reply to me that "it remains in a little part of the body of each caterpillar that is still alive, which will always be as small as it must to be sheltered from the action of the fire that rends or scatters the bodies of these Caterpillars." And misleads you to say "that the ancients were mistaken to have introduced transmigrations of souls instead of transformations of the same animal, which always keeps the same soul." Nothing more subtle could be imagined to resolve this difficulty.

[*The example of the silkworm*] But consider carefully, Monsieur, what I am about to say to you. When a silkworm moth lays her eggs, each of these eggs according to you has a silkworm soul, whence it turns out that little silkworms emerge from them 5 or 6 months later. Now if a hundred silkworms had been burned, there would also be according to you a hundred silkworm souls in as many little parcels in the ashes: but on the one hand I do not know whom you could persuade that each silkworm after having been burned has remained the same animal which has kept the same soul joined to a little parcel of ash which used to be a little part of its body; and on the other hand, if this were so, why are no silkworms born from these parcels of ash, as they are born from eggs?

[*The examples of the caterpillar, the butterfly, and the ram*] 6. But this difficulty appears greater in animals that are known with more certainty never to be born but from the union of the two sexes. I ask, for example, what became of the soul of the Ram that Abraham sacrificed instead of Isaac, and then burned? You will not say that it passed into the fetus of another ram. For this would be the metempsychosis of the ancients which you condemn. You will instead reply to me that it remained in a parcel of the body of this ram reduced to ashes, and that in this way what happened was only the "transformation of the same animal, which always kept the same soul." This could be said with some plausibility, within your hypothesis of substantial forms, of a caterpillar that becomes a butterfly, because the Butterfly is an organized body as well as the caterpillar, and thus is an animal that can be taken to be the same as the Caterpillar, because it preserves many of the caterpillar's parts without any change, while the rest have only changed their shape. But since the part of the ram reduced to ashes into which the Ram's soul would have withdrawn is not organized, it cannot be taken for an animal, and so it does not compose an animal when the ram's soul is joined to it—still less a ram, as the soul of a ram would have to make. So what will the soul of the ram do in this ash? For it cannot detach itself from it to go elsewhere: this would be a transmigration of soul, which you condemn. And it is the same with an infinity of other souls which would not compose animals if they were joined to nonorganized parts of matter, and which as far as we can see cannot be, according to the laws established in nature. This infinity of souls joined to bodies that would not be animate will therefore be an infinity of monstrous things. […]

I am, Monsieur, Your very humble and very obedient servant Antoine Arnauld

30. Leibniz to Arnauld, Hanover, 19 October 1687

Monsieur, As I will always set great store by your judgment, when you are able to learn about the subject in question, I want to make an effort here to try to make the positions I hold to be important and just about secured appear to you, if not certain, then at least tenable. […]

[*Response to Arnauld's inquiry about the notion 'express'*] I had said that since the soul naturally expresses the whole universe in a certain sense, and according to the relation other bodies have to its own, and consequently expresses more immediately what belongs to the parts of its body, it must in virtue of the laws of the relation, which are essential to it express in a particular way certain extraordinary movements of the parts of its body, which happens when it feels pain. You reply to this that you have no clear idea of what I mean by the word "express"; if I mean a thought by it, you do not agree that the soul has more thought and knowledge of the motion of the lymph in the lymphatic vessels than of the Satellites of Saturn, but if I mean something else you do not know, you say, what it is; and consequently (supposing that I cannot explain it distinctly) this term will be no use in showing how the soul can give itself the sensation of pain, since to do that (as you would have it) it would have to have known already that I am being pricked, whereas it gains this knowledge only by the pain it feels. To reply I will explain this term which you judge obscure, and

I will apply it to the difficulty It is thus that a perspectival projection expresses its Ground Plan. Expression is common to all forms, and is a genus of which natural perception, animal sensation, and intellectual knowledge are species. In natural perception, and in sensation, it suffices that what is divisible and material, and dispersed in many beings, is expressed or represented in a single indivisible being, or in substance endowed with a true unity, and this representation is accompanied by consciousness in the rational soul, and it is then that it is called *thought*. Now this expression occurs because all substances have a sympathetic relation with all others and receive some proportional change corresponding to the least change occurring in the whole universe, although this change is more or less noteworthy according as the other bodies or their actions have more or less relation to ours. I believe that M. Descartes himself would have agreed with this, for he would no doubt agree that because of the continuity and divisibility of all matter the least motion extends its effect over neighboring bodies, and consequently from neighbor to neighbor to infinity, but diminished proportionately; thus our body must be affected in some way by the changes in all the others. Now to all the motions of our body there correspond certain perceptions or thoughts, more or less confused, of our soul; therefore the soul too will have some thought about all the motions in the universe, and according to me every other soul or substance will have some perception or expression of them. It is true that we do not distinctly perceive all the motions of our body, like that of lymph for example, but (to make use of an example I have already employed) this is like the fact that I must perceive a little of the motion of each wave on the shore so that I can perceive what results from their coming together, namely that great sound that is heard near the sea. Thus we also feel some confused result of all the motions occurring within us; but being accustomed to this internal motion, we perceive it distinctly and with reflection only when there is a considerable alteration as at the onset of an illness. And it would be good for Physicians to apply themselves to distinguish more carefully these sorts of confused sensations we have of our body. Now since we perceive other bodies only by their relations to ours, I had reason to say that the soul expresses better what belongs to our body, so the satellites of Saturn or Jupiter are known only by a motion that takes place in our eyes. I believe that a Cartesian will share my opinion in all of this, except that I suppose that there are other souls or substantial forms than ours around us, to which I attribute an expression or perception lower than thought, whereas the Cartesians refuse sensation to beasts, and admit no substantial form outside of man. This has no bearing on the question we are treating here, of the cause of pain. The issue now therefore is to know how the soul perceives its body's motions, since we can see no way to explain by what channels the action of an extended mass passes to an indivisible being. The ordinary Cartesians confess that they cannot explain this union; the authors of the hypothesis of occasional causes believe it is a knot worthy of a deliverer, for which a *Deus ex machina* has to intervene; as for me I explain it in a natural way by the concept of substance or complete being in general, which implies that its present state is always a natural consequence of its previous state: for the nature of every soul is to express the universe. It was originally created in such a way that in virtue of the proper laws of its nature it must turn out to agree with what is happening in bodies, particularly its own; one must therefore not be astonished that it belongs to it to represent the pricking when it happens to its body. And to finish explaining myself on this matter, let there be

State of bodies at moment A	State of the soul at moment A
State of bodies at moment B	State of the soul at moment B
[pricking]	[pain]

As the state of bodies at moment B then follows from the state of bodies at moment A, so state B of the soul is a consequence of A, the preceding state of the same Soul, in accordance with the concept of substance in general; now the states of souls are naturally and essentially expressions of the corresponding states of the world, particularly of the bodies that are then proper to them; therefore since the pricking makes up part of the state of the body at moment B, the representation or expression of the pricking, which is the pain, will also make up part of the state of the soul at moment B. For as one motion follows from another motion, so one representation follows from another representation, in a substance whose nature is to be representative. Thus the soul must indeed perceive the pricking when the laws of the relation require it to express more distinctly a more noteworthy change in the parts of its body. It is true that the soul does not always perceive distinctly the causes of the pricking and of the future pain, when they are still hidden in the representation of state A, as when one is sleeping or in some other way does not see the pin coming, but this is because the movements of the pin are making too small an impression then, and although we are already affected in a way by all these movements and the representations in our soul, and thus have within us the representation or expression of the causes of the pricking, and consequently the cause of the representation of the same pricking, that is, the cause of the pain, we can differentiate them from so many other thoughts and motions only when they become considerable. Our soul makes reflection only on the more singular phenomena that are distinguished from the rest thinking distinctly of none when it equally thinks of all. […]

[*Response to Arnauld's further remarks about the indivisible and indestructible substantial forms*] I come to the point about the forms or Souls which I hold to be indivisible and indestructible […] But to come to your doubts concerning this indestructibility:

1. I had maintained that something that is truly one single being must be admitted in bodies—matter or extended mass in itself never being anything but many beings, as St. Augustine quite rightly observed following Plato. Now I infer that there are not many beings where there is not one that is truly one being, and that all multiplicity presupposes unity. You reply to this in many ways, but without touching the argument in itself, which is unassailable, using only ad hominem objections and difficulties, trying to show that what I say is not sufficient to resolve the difficulty; and first of all you are amazed at how I can use this reason, which would have been obvious in the eyes of Monsieur Cordemoy, who composes everything of Atoms, but must necessarily be false according to me (as you judge), since apart from animate bodies, which do not make up a hundred thousand thousandth part of the others, all the others must necessarily be many beings, and so the difficulty will recur. But that shows me, Monsieur, that I have not yet explained myself well so that you can make sense of my Hypothesis. For not only do I not recall having said that there is no substantial form beyond souls; I am very far from the view that says that animate bodies are only a small part of the rest. For I believe instead that everything is full of animate bodies, and there are incomparably more souls for me than there are Atoms for M. Cordemoy, who makes their number finite, while I hold that the number of souls, or at least forms, is entirely infinite, and that since matter is divisible without end, one can specify no part of it so small that there are not within it bodies that are animate, or at least informed, that is, bodily substances.

2. As for this other difficulty you raise, namely that the soul joined to matter does not make with it a being truly *one* since matter is not truly *one* in itself, and the soul as you judge gives it only an extrinsic denomination, I reply that it is the animate substance to which this matter belongs that is truly a being, and the matter taken as mass in itself is only a pure phenomenon, or well-

founded appearance, as space and time are also. […] Finally I agree that the name "one" can be given to a collection of inanimate bodies, though no substantial form links them, as I can say "here is one rainbow," "here is one flock"; but this is a unity of phenomenon or of thought, which is insufficient for what is real in phenomena.

3. You object that I admit no substantial forms but in animate bodies (which, however, I do not recall having said); now as all organized bodies are many beings, the forms or souls, very far from making one being of them, will consequently require many beings instead, so that the bodies may be animate. I reply that supposing there is a soul or substantial form in beasts, or other bodily substances, we must reason about them on this point as we all reason about man, who is a being endowed with a true unity, which his soul gives him, even though the mass of his body is divided into organs, vessels, humors, spirits; and that these parts are no doubt full of an infinity of other bodily substances endowed with their own forms. As this third objection substantially fits in with the previous one, that solution will do for it too.

4. You judge that giving a soul to the beasts is without foundation, and you believe that if there were one it would be a mind, that is, a thinking substance, since we are only acquainted with bodies and minds, and have no idea of another substance. Now to say that an oyster thinks, that a worm thinks—that is what is hard to believe. This objection likewise confronts all who are not Cartesians; but not only must we believe that it is not entirely without reason that all humankind has always tended toward the opinion it has about the sensation of beasts, I believe in addition that I have shown that every substance is indivisible, and that consequently every bodily substance must have a soul, or at least a form that has some analogy with the soul, since otherwise bodies would only be phenomena.

[*Not everything that is clear is distinct*] To assert that every substance that is not divisible (that is according to me every substance in general) is a mind, and must think, appears to me incomparably more audacious and destitute of foundation than the preservation of forms. We know only five senses, and a certain number of metals. Should one conclude from this that there are no others in the world? There is much more likelihood that nature, which loves variety, has produced other forms than those that think. If I can prove that there are no other second-degree figures than the conic sections, this is because I have a distinct idea of these lines, which enables me to arrive at an exact division; but as we have no distinct idea of thought, and cannot demonstrate that the concept of an indivisible substance is the same as that of a thinking substance, we have no grounds for asserting it. I agree that our idea of thought is clear, but not everything that is clear is distinct. It is only by inner sensation that we know thought (as Fr. Malebranche has already observed), but one can know by sensation only things one has experienced; and as we have not experienced the functions of other forms, we should not be astonished that we have no clear idea of them, for we would not have to have one even if it were agreed that there are such forms. It is a misuse to wish to make use of confused ideas, however clear they may be, to prove that something cannot be. And when I consider only, distinct ideas, it seems to me that one can conceive that phenomena that are divisible or spread into many beings can be expressed or represented in a single indivisible being, and this suffices for conceiving a substantial form, without it being necessary to attach thought or reflection to this representation. I would like to be able to explain the differences or degrees of the other immaterial expressions that are without thought, in order to distinguish simple bodily substances, those that are alive, and animals insofar as they can be distinguished, but I have not meditated on it enough or examined nature enough to be able to judge of forms by comparing their organs and operations. […]

It remains now only, to meet the difficulties you bring against the indestructibility of substantial forms, and first of all I am astonished that you find it strange and untenable, for on your own view all those who give the beasts a soul and sensation must maintain this indestructibility. The alleged difficulties are only prejudices of the imagination, which may bring common people up short, but can have no effect on minds capable of meditation. So I believe that it will be easy to satisfy you on that. Those who conceive there to be something like an infinity of little animals in the least drop of water, as the experiments of M. Leeuwenhoek have made known, and who do not find it strange that matter is everywhere filled by animate substances, will not find it strange either that there is something animate in the ashes themselves, and that fire can transform an animal and reduce it to smallness, rather than destroy it entirely. What can be said of one caterpillar or one silkworm can be said of a hundred or a thousand; but it does not follow that we should be seeing silkworms reborn from the ashes. This is perhaps not the order of nature. I know that many assert that seminal virtues remain in the ashes, in such a way that plants can be reborn from them, but I am not willing to make use of doubtful experiences. What I cannot determine is whether these little organized bodies, enveloped in a kind of contraction of a larger one that comes from being corrupted, are completely outside the line of generation, or whether they can take the stage again in their time. Those are secrets of nature, of which men ought to acknowledge their ignorance.

6. It is only in appearance and according to imagination that the difficulty is greater with regard to the larger animals that we see born only from the union of two sexes, which apparently is no less true of the least insects. I learned some time ago that M. Leeuwenhoek has views closely approaching mine, in that he holds that even the largest animals are born through a kind of transformation […]. It is true that I do not observe them extending their opinion so far as to say that corruption and death itself is also a transformation in living things destitute of a rational soul, as I hold, but I believe that if they had been told of this view they would not have found it absurd, and there is nothing so natural as to believe that what does not begin does not perish either. And when one recognizes that all generations are only augmentations, and developments of an animal already formed, one will easily be convinced that corruption or death is nothing but the diminution and enveloping of an animal that nevertheless survives and remains alive and organized. […]. Sleep, which is an image of death; Trances; a silkworm's burial in its cocoon, which may count as a death; the resuscitation of drowned flies accomplished by covering them with a dry powder (without which they would remain dead for good if left without help), and that of swallows that winter in the reeds, and are discovered with no appearance of life […] all these things are capable of confirming my view that these different states differ only in degree […].

[*Leibniz's response to Arnauld's example of the ram*] To say that the souls of beasts remain without bodies, or that they remain concealed in a body that is not organized—all this does not appear so natural. Whether the animal that results from the contraction of the body of the ram that Abraham sacrificed in place of Isaac should be called a ram is a question about words, more or less like the question whether a butterfly can be called a silkworm. The difficulty you find with regard to this ram reduced to ashes arises only because I had not explained myself sufficiently, for you suppose that there remains no organized body in these ashes, which gives you the right to say that it would be a monstrous thing, this infinity of souls without organized bodies, whereas I suppose that there is naturally no soul without an animate body, nor animate body without organs; and neither ashes nor other masses appear to me entirely incapable of containing organized bodies.

As for Minds, that is, thinking substances, capable of knowing God, and discovering eternal

truths, I hold that God governs them according laws different from those by which he governs the other substances. For as all the forms of substances express the whole universe, one may say that brute substances express the world rather than God, but that Minds express God rather than the world. So, God governs brute substances according to the material laws of force or communications of motion, but Minds according to the spiritual laws of justice, of which the others are incapable. And that is why brute substances can be called material, because the economy God observes with regard to them is that of a workman or Machinist; but with regard to minds God carries out the function of Prince or legislator, which is infinitely more exalted. And since with regard to these material substances God is only what he is with regard to everything, namely the general author of beings, he assumes another role with regard to minds, whereby he is conceived as invested with will, and moral qualities, since he is himself a mind, and like one of us, to the point of entering into a social connection with us, of which he is the head. And it is this general Republic or Society of minds under this supreme Monarch that is the most elevated part of the universe, composed of so many little Gods under this great God. For it may be said that created spirits differ from God only as more differs from less, as finite differs from infinite. And it can be truly asserted that the whole universe was made only to contribute to the ornamentation and the felicity of this city of God. This is why everything is arranged in such a way that the laws of force, or the purely material laws, work together throughout the universe to execute the laws of justice or of love; it is why nothing can harm souls that are in the hand of God; it is why everything must issue in the greatest good of those who love him. This is why, since spirits must keep their personal role, and their moral qualities, so that the city of God does not lose any person, they must preserve in particular a kind of remembrance, consciousness, or power to know what they are, on which depends all their morality, sufferings, and punishments, and consequently they must be free from revolutions of the universe that would render them entirely unknowable to themselves, and would turn them morally speaking into another person; whereas it suffices that brute substances remain the same individual merely in metaphysical rigor, though they may be subjected to every change imaginable, since they are also without consciousness or reflection. […]

[Finally, to collect my thoughts in a few words, I hold that **every substance contains in its concept all its states, past and future, and even expresses the whole universe according to its point of view**, since nothing is so far from anything else that it has no commerce with it. And if it has a body this will be according to the relationship to the parts of its body that it expresses more immediately. And consequently nothing happens to it but from its depths and in virtue of its own concept, provided that God's concurrence is joined to it, but it perceives other things, whereby it expresses them naturally, having been first created in such a way that it could do this thereafter and accommodate itself to them, and it is in this requirement that the action of one substance on another consists. As for bodily substances, I hold that mass, when we are only considering what is divisible in it, is a pure phenomenon; that every substance has a true unity in metaphysical rigor; and that it is indivisible, ingenerable, and incorruptible. That all of matter must be full of substances that are animate or at least living or having something that comes close to it; that generations and corruptions are only transformations from small to large and vice versa; that there is no parcel of matter in which there is not a world with an infinity of creatures, both organized and piled together. Finally, that the works of God are infinitely more great, more excellent, more numerous, and better ordered than is commonly believed, and that the machine or the organism, that is, the order, is as it were essential to them down to the least parts. And that there is no Hypothesis that displays this better than ours, on which there are everywhere

substances representing the perfections of God and the beauty of the universe in their manner, and nothing has been left empty, uncultivated, sterile, and without perception. But souls capable of reflection and knowledge of the truth imitate God much more and are regarded in an entirely particular manner in the universe, since they are capable of entering into fellowship with God, and composing a kind of perfect city of which God is the Monarch. This is why their preservation is accompanied by remembrance of punishment and reward.][4]

[…] I wish you many more years for the public's interest and for my own. and I am with a sincere passion Monsieur your very humble and very obedient servant, Leibniz.

33. Leibniz to Arnauld Nuremberg[?], 14 January 1688

Monsieur, […] I would hope with all my heart that you could have the leisure to meditate a half hour on my objection to the Cartesians. Your intelligence and your sincerity itself make me sure that I'd get you to see the difficulty, and that you'd recognize what there is to it. The discussion is not long and the thing matters greatly, not only in mechanics but also in metaphysics. For motion in itself, apart from force, is relative, and the subject it is in cannot be determined. But force is something real, and absolute; and that is why nature preserves quantity of force, and not quantity of motion. It follows at the same time that there is something other than extension and motion in nature, unless all force or power is refused to things, which is to change them from substances, which they are, into modes, and to lapse unthinkingly into the dangerous views of Spinoza, who would have it that all things are only modes of God. […]

34. Arnauld to Ernst [?], 15 March 1688]

[…] P.S. I am presently so overburdened with different responsibilities that I can't give a response to M. Leibniz, being in no condition to think about the abstract matters he speaks to me about. Your Highness will be so kind as to make my excuses the next time You have some occasion to write to him. Arnauld.

[4] This summary statement is taken from letter 29, which is a draft version for letter 30.