

The Correspondence between Leibniz and Arnauld

G. W. Leibniz and Antoine Arnauld

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[Brackets] enclose editorial explanations. Small ·dots· enclose material that has been added, but can be read as though it were part of the original text. Occasional •bullets, and also indenting of passages that are not quotations, are meant as aids to grasping the structure of a sentence or a thought. Each four-point ellipsis indicates the omission of a brief passage that seems to present more difficulty than it is worth.—Leibniz was 34 years Arnauld's junior. Arnauld had had a distinguished exchange of views with Descartes 48 years before the time of the present exchange.—The nobleman through whom Leibniz and Arnauld communicated was a landgrave, German *Landgraf*, meaning a Count who ruled over his County—a kind of minor king.—In this version most of the polite modes of address and reference are replaced by pronouns and surnames.—Except for very short bits, anything by Arnauld, whether said directly or quoted by Leibniz, is in a slanted type similar to italics.

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1. Leibniz to Count Ernst von Hessen-Rheinfels, 1.ii.1686

I recently composed a short discourse on metaphysics, and would very much like to have Monseigneur Arnauld's opinion of it. Its way of dealing with the questions about

- grace,
- the concourse of God and creatures [= 'how God's actions are related to those of creatures'],
- the nature of miracles,
- the cause of sin and the origin of evil,
- the immortality of the soul,
- ideas,

and other such topics are dealt with in a way that seems to open up new possibilities for clarifying very great difficulties. I have enclosed herewith the summary of its theses; ·I can't send you the whole thing· because I haven't yet been able to have a fair copy made. Please will you have this summary sent to Arnauld with a request to give it a little consideration and to state his opinion? I can't think of anyone more fit to judge it than he is, given his excellence in theology and in philosophy, in reading and in meditation. I want to have a critic as careful, clear-headed and reasonable as Arnauld is, because I am always ready—no-one is readier!—to back down when I am given reason to. He himself has recently been absorbed in some of these same topics, which is my main reason for thinking that he may find this trifle not entirely unworthy of his consideration. If he finds some obscurity I shall explain my ideas sincerely and openly, and ·quite generally· if he finds me worthy to be taught by him I shan't give him any cause for dissatisfaction. I beg you to enclose this note with the summary below, and to send them both to Monseigneur Arnauld.

[The 'short discourse' or 'trifle' in question is Leibniz's *Discourse on*

Metaphysics, which Arnauld never saw. This 'summary' of it is the one that was printed along with the complete work. Before we embark on it, a translation matter has to be tackled. In article 24 the phrase 'vivid or dark, clear or confused' translates *claire ou obscure, distincte ou confuse*, which everyone else wrongly translates as 'clear or obscure, distinct or confused'. The crucial point concerns *clair(e)*, which often means 'bright' or 'vivid' or the like, as in *lumière claire* = 'bright light'. It can also mean 'clear', but Descartes took it away from that meaning by his use of the phrase *clair et distinct* and his use of **pain** as an example of something *clair* but not *distinct*! It is impossible that he meant 'clear'. Once *clair* is handled properly, the English word 'clear' is freed up to serve as a translation of *distinct*. The point about pain is that it is vivid, up-front, not shady or obscure, but at the same time not clear. Article 24 is itself good evidence that Leibniz followed Descartes in this usage, and there is more on page 37.]

* * * * *

1. God is perfect, and does everything in the most desirable way.
2. Against those who maintain that there is no goodness in God's works, and that the rules of goodness and beauty are arbitrary.
3. Against those who think that God could have done better.
4. Love for God requires complete contentment and acceptance regarding what he does.
5. What the rules of perfection of God's conduct consist in; the simplicity of means is balanced against the richness of ends.

6. God does nothing disorderly, and it isn't possible even to *feign* events that are not regular.
7. Miracles conform to the general order, although they run counter to subordinate rules. What God wills and what he allows; general and particular will.
8. To distinguish God's actions from those of created things, it is explained what the notion of an individual substance consists in.
9. Each substance expresses the whole universe in its own way; and everything that happens to it is included in its notion, with all the circumstances and ·because it expresses everything else· the whole series of external things.
10. The doctrine of substantial forms has some value, but such forms make no difference to observable events, and shouldn't be used to explain particular effects.
11. The reflections of the so-called Scholastic theologians and philosophers should not be completely despised.
12. The notions that make up extension involve something imaginary, and can't constitute the substance of body.
13. Because the individual notion of each person contains once and for all everything that will ever happen to him, we can see in that notion the a priori proofs or reasons for the occurrence of every event—seeing why one thing happens rather than another. But although these truths are certain, they are still contingent, for they are based on the free will of God and of created things. It is true that there are always reasons for their choices, but those reasons incline without necessitating.
14. God produces a variety of substances according to his different views of the universe; and he intervenes so as to bring it about that the particular nature of each substance makes what happens to it •correspond to what happens to all the others, without their directly •acting on one another.
15. When one finite substance 'acts on' another, all that happens is that the first undergoes an increase in the degree of ·clarity of· its expression while the other undergoes a decrease, which happens because God formed them in advance so that they would fit together.
16. Our essence expresses everything, so it expresses God's extraordinary concourse. But our nature or clear expression is finite, and follows certain subordinate rules; it doesn't extend far enough to take in God's extraordinary concourse [= 'God's (rare) miracles'].
17. An example of a subordinate rule of natural law, which shows that God always systematically conserves the same *force*, but not (contrary to the Cartesians and others) the same quantity of *motion*.
18. The distinction between force and quantity of motion is important. For one thing, it shows that to explain how bodies behave we must bring in metaphysical considerations apart from extension.
19. The usefulness of final causes in physical science.
20. A memorable passage by Socrates in Plato's *Phaedo* against over-materialist philosophers.
21. If mechanical rules depended only on geometry and not on metaphysics, the observed facts would be quite different.

22. Reconciliation of two methods, one working through final causes and the other through efficient ones, in order to satisfy both sides: those who explain Nature mechanically, and those who appeal to immaterial natures. [An efficient cause of an event *x* is something that *makes x* happen; its final cause is what *x* happens *for*, what the *purpose* is of *x*'s happening.]
23. Returning to immaterial substances, I explain how God acts on the mind's understanding, and discuss whether we always have an idea of what we are thinking about.
24. What it is for knowledge to be vivid or dark, clear or confused, adequate or inadequate, intuitive or suppositive; three kinds of definition—nominal, real, and causal.
25. In what cases our knowledge is combined with the contemplation of an idea.
26. We have within us all ideas; Plato's doctrine of reminiscence.
27. How our soul can be compared with a blank tablet, and in what way our notions come from the senses.
28. God is the only immediate object of our perceptions that exists outside us, and he is our only light.
29. However, we think directly through our own ideas and not through God's.
30. How God inclines our soul without necessitating it; we have no right to complain; we should not ask why Judas sinned, since that free act is included in his notion; we should only ask why Judas the sinner was admitted into existence in preference to some other possible people. Original imperfection or limitation, prior to sin; the different levels of grace.
31. The reasons for election, foreseen faith, middle knowledge, absolute decrees. Everything comes down to God's reason for deciding to admit into existence a certain possible person, whose notion contains a certain series of graces and free actions. This removes the difficulties at a stroke.
32. The usefulness of these principles in matters of piety and religion.
Explaining the communication between the soul and the body, which has been taken to be inexplicable or miraculous. The origin of confused perceptions.
33. How minds differ from other substances, souls or substantial forms. The immortality that we want implies memory.
34. The excellence of minds; God attends to them ahead of other creatures; minds express God rather than the world, and other simple substances express the world rather than God.
35. God is the monarch of the most perfect republic, composed of all minds, and the happiness of this city of God is his main aim.
36. Jesus Christ revealed to men the wonderful mystery and laws of the Kingdom of Heaven, and the splendour of the supreme happiness that God prepares for those who love him.

2. Arnauld to Count Ernst von Hessen-Rheinfels, 13.iii.1686

[The angle-bracketed passage below was omitted from the copy that was sent to Leibniz. The importance of this will appear in the three-item display on page 6.] *I have received what you have sent me of the metaphysical thoughts of M. Leibniz as a demonstration of his affection and esteem, for which I am much obliged to him; but I have been so busy since then that I wasn't able to read his work until three days ago. And now I have such a bad cold that I can't write much, and will only say that I find in these thoughts so many things that alarm me—things that I believe nearly everyone will find shocking—that I don't see what use such a work can be when nearly everyone will reject it. To take just one example, article 13: 'The individual notion of each person involves once and for all everything that will ever happen to him' and so on. If that is so, <God was free to create Adam or not create him; but given that he did create him, everything that has happened to the human race since then—and everything that ever will happen to it—was or will be compelled to happen through a more than fatal necessity.> [‘Fatal necessity’ means ‘the certain-to-happen status of something that is *fated* to happen’; ‘more than fatal’ seems to be mere exaggeration.] ·The whole human race comes into this· because the individual notion of Adam contained the consequence that he would have so many children, and the individual notion of each of these children contained everything they would do and all the children they would*

have, and so on. ·Think what this implies about God's freedom·! Given that God chose to create ·Adam, he wasn't free in the choice regarding any aspect of the history of the human race; just as, given that God chose to create ·me, he wasn't free in the choice of whether to create ·a nature capable of thought. ·With my cold·, I'm in no condition to take the argument further; but Leibniz will understand me well enough, and perhaps he won't see any drawback in the consequence I draw from article 13. But if he doesn't, he has good cause to fear that he'll be alone in his opinion. And if I'm wrong about that, ·and other people do believe what he says·, my objection to him is even more strenuous. But I can't hide from you how sad I am that his apparent attachment to these opinions, which he rightly thinks would get a bad reception from ·the Catholic Church, prevents him from entering ·it; although, if I remember clearly, you once forced him to acknowledge that there is no reasonable basis for doubting that it is the true Church. [I have never accepted that—note by Leibniz in the margin of his copy.] Wouldn't it be better if he abandoned these metaphysical speculations, which can't be useful to him or to anyone else, in order to apply himself seriously to the greatest business that he can ever have, namely the assurance of his salvation by returning to the Church. . . . ?

3. Leibniz to the Count, to be passed on to Arnauld, 12.iv.1686

I don't know what to say to Arnauld's letter, and I should never have believed that someone who has such a deservedly great reputation, and who has given us such fine reflections on morality and logic, would rush to judgment in this way. I'm no longer surprised that some people have lost their temper with him! Still, I maintain that we should occasionally put up with the ill humour of a person of extraordinary merit, provided that •his behaviour has no •practical• consequences, and that •he returns to fair-mindedness once the illusions caused by ill-founded prejudice are blown away. I'm still waiting for this justice from Arnauld. But whatever reason I may have for complaint, I'll suppress any reflections that aren't essential to the subject and that might make trouble between us; and I hope he will do the same, if he is kind enough to instruct me. I can assure him only that •certain conjectures of his are in fact wrong, that •some judicious people have expressed an opinion different opinion •from his•, and that •despite their approval I'm not in too much of a hurry to publish something on abstract subjects that are to the liking of a few, especially because the public has still heard almost nothing of some more plausible discoveries that I made years ago. When I wrote down these present meditations [i.e. the *Discourse on Metaphysics*] it was •not for publication but• only so as to profit privately from the opinions of the ablest people, and to confirm or correct my exploration of the most important truths. . . . If Arnauld will do me the favour of freeing me from the errors that he thinks dangerous—opinions that (I say in good faith) I can't yet see any harm in—I shall certainly be greatly obliged to him. But I hope that he will act with some moderation and will do me justice, because *that* much is owed even to the least of men

by someone who has wronged him by hasty judgment.

He chooses one of my theses to show that it is dangerous. But I don't see the danger, or else I •see it but• am temporarily unable to see that it *is* a danger; and this has enabled me to recover from jolt that Arnauld gave me, and made me think that what he says •about the thesis in question• is a result of mere prejudice. So I shall try to rid him of this strange opinion, which he has formed a little too hastily.

I had said in article 13 that 'the individual notion of each person involves once and for all everything that will ever happen to him'; from which Arnauld draws the consequence that everything that happens to a person and even to the whole of the human race must happen through a more than fatal necessity. As though notions made things necessary, and the complete notion that God has of a person couldn't *include* the person's acting freely! (Similarly, God has a prevision—an advance view—of the whole truth about a person; and Arnauld's mistake is like thinking that a person's acting freely couldn't be among the things that God sees in advance.) And he adds that perhaps I won't object to the conclusion that he draws. Yet I had explicitly declared in article 13 that I did *not* accept such a consequence. So either he doubts my sincerity, and I've given him no reason for that, or he didn't examine carefully enough the thesis that he was rejecting. I shan't find fault with this, though, . . . when I remember that he was writing at a time when illness left his mind not fully free, as his letter itself indicates. And I want him to know how much respect I have for him. [Leibniz, aged 26 and trying to start a career, first met the famous Arnauld in Paris in 1672. In a letter to his employer at that time Leibniz boasted of being on friendly terms with 'the world-famous M. Arnauld. . . . a man of the

deepest and profoundest thoughts that a true philosopher can have.] I come to the proof of his inference, and in order to do it full justice I'll give Arnauld's own words.

If the individual notion of each person contains once for all everything that will ever happen to him,

what Arnauld wrote next: *God was free to create or not create him; but given that he did create him, everything that has happened to the human race since then was or will be compelled to happen through a more than fatal necessity.*

what appeared in the letter as sent to Leibniz: *God was free to create everything that has happened to the human race since then was or will be compelled to happen through a more than fatal necessity.*

the passage as wrongly 'repaired' by Leibniz: God was not free to create everything that has happened to the human race since then, and everything that will ever happen to it is compelled to happen through a more than fatal necessity.

(There was some fault in the copy, but I think I have repaired it correctly.) *·The whole human race comes into this· because the individual notion of Adam contained the consequence that he would have so many children (I agree), and the individual notion of each of these children contained everything they would do and all the children they would have, and so on (I agree to this too, for it is only my thesis applied to a particular case). Given that God chose to create •Adam, he wasn't free in the choice regarding any aspect of the history of the human race; just as, given that God chose to create •me, he wasn't free in the choice of whether to create •a nature capable of thought.'*

Those last words must contain properly the proof of the inference, but it's obvious that they confuse hypothetical necessity with absolute necessity. There has always been a distinction between **(1)** what God is free to do absolutely

and **(2)** what he has bound himself to do by virtue of certain decisions already taken (and nearly every decision he makes has a universal import). Some of the Socinians offend against God's dignity by likening him to a man who makes a decision at a given time in the light of what is going on right then; and they try to preserve God's freedom by contending that his first decisions regarding Adam or others *don't* have implications for their posterity, because if they did have such implications, God might now think it would be good to do something that he *can't* do—·isn't now *free* to do· because it is ruled out by an earlier decision. In contrast with this, everyone ·else· agrees that God has regulated the whole successive course of the universe from all eternity, without his liberty's being in any way lessened by that.

It's obvious too that this objection ·of Arnauld's· separates God's acts of will from one another, though really they are all interrelated. God's decision to create a particular Adam shouldn't be thought of as separate from all the other decisions that he makes regarding Adam's children and the whole of the human race. Thinking of it in that way—i.e. thinking of it as God's decree *that Adam should be created*, without his decree's bringing in anything concerning Adam's posterity—is to think of God as depriving himself of the freedom to create Adam's posterity as he thinks fit, which is a very strange way of thinking! [This is a typical Leibniz flourish: the Socinians say that they are **keeping God free** to manage Adam's posterity at various points in its history, whereas Leibniz says they are **depriving God of the freedom** to make any decisions he likes about Adam's posterity right from the outset.]

The right way to look at this matter is to think of God as choosing *not* a vague Adam but an Adam who is *completely* represented in God's mind along with all his ideas of other possible beings, this being a representation that includes all the individual details including 'eventually having such-

and-such a particular posterity'. I'll say it again: in choosing •Adam, God already has •Adam's posterity in mind; he is choosing both at the same time. I don't see how there can be any harm in this thesis; and any other view about God's decisions would have him acting out of character, acting in an un-God-like way. Consider this parallel: A wise monarch, when he chooses a general whose connections •within the army• he knows, is in effect choosing at the same time a number of colonels and captains whom he knows this general will want; the monarch has prudential reasons for letting the general have the officers he wants; but these reasons don't destroy the monarch's freedom or his absolute *power* •to appoint whatever officers *he* wants•. All that holds even more strongly in the case of God. To be more exact about the parallel, think of God as performing a more general and more comprehensive act of will •than the human monarch can perform•, an act of will that relates to the whole order of the universe (God can do that because the universe is like a totality that he takes in, in all its detail, at a glance). This act of will implicitly includes the other acts of will concerning what is to come into existence in this universe, amongst them the act of creating a particular Adam whose series of descendants will be thus and so, all this having also been chosen by God. One could put it like this: between **(1)** these particular acts of will and **(2)** the initial general one there's a simple relation that is pretty much like the relation between **(1)** the facts about a town that are captured by a view of it from one viewpoint and **(2)** the facts captured by the ground plan of the town. •The relation I have in mind is that of *expressing*•: the particular acts of will all *express* the whole universe, just as each set-of-facts-seen-from-one-viewpoint *express* the town. [Leibniz really does say that certain items 'all express' (*expriment toutes*) the universe, whereas of certain other items he says that 'each expresses' (*chaque exprime*) the town; but that seems

to be a mere stylistic accident. The comparison he is offering would collapse if he really meant something by the difference between 'all' (plural) and 'each' (singular).]

Indeed the wiser one is the fewer *separate* acts of will one has and the more one's views and acts of will are comprehensive and *linked together*. And each particular act of will contains a connection with all the others, so that they may be as much in harmony as possible. Far from finding something shocking in this, I would have thought that the denial of it would destroy God's perfection. I think someone would have to be *very* hard to please or *very* set in his views to find in such innocent—indeed such *reasonable*—opinions any basis for such exaggerated statements as the weird ones that were sent to you •by Arnauld•. Anyone who gives the least *thought* to what I am saying will find that its truth is evident from the •very meanings of the• terms themselves. By 'the individual notion of Adam' I definitely mean to refer to a *complete* representation of a *particular* Adam who has such-and-such individual qualities that him from an infinity of other possible persons who are very like him but yet different from him (just as every ellipse is different from the circle, however closely it approximates to it). God preferred Adam •to any of those other possible persons•, because it pleased him to choose precisely *this* particular order of the universe, •the one that includes Adam•; and anything that follows from his •initial• decision is necessary only by a hypothetical necessity and does not at all destroy God's liberty or that of created minds. There is a possible Adam whose posterity is thus-and-so, and an infinity of other Adams whose posterity would be different; isn't it true that these possible Adams (if they can be called that) differ from one another, and that God has chosen just one of them—our Adam?

There are so many reasons to prove the impossibility—indeed the absurdity and even the impiety—of the contrary view that I believe that all men are basically of the same opinion when they *think* a little about what they are saying. If Arnauld hadn't *immediately* formed a prejudice about me, perhaps he wouldn't have found my propositions so strange and wouldn't have drawn such conclusions from them.

I sincerely believe that I have satisfactorily met Arnauld's objection, and I'm glad to see that the passage he chose as one of the most shocking is (in my opinion) so very *unshocking!* But I don't know if I'll be fortunate enough to get him to see this my way. Among the thousand advantages of great merit there is one small defect, namely that •highly meritorious people—rightly having great faith in their own opinions—are not easily cured of their mistakes. I myself, not being one of •them, would take pride in admitting that I had learned something ·from a critic·; I would even *enjoy* this, provided I could say it sincerely and without flattery.

The other thing I have to say is this: I want Arnauld to know that I don't lay the least claim to the glory of being an innovator [here = 'intellectual revolutionary'], as he seems to have thought. On the contrary I find that the oldest and most commonly received opinions are usually the best. And I don't think it can be right to accuse someone of being an innovator when he has produced only a few new truths, without overturning any received opinions. After all, that's what geometers do; it's what happens when someone digs deeper ·into ground that is already being cultivated·. As for authorized opinions that mine oppose, I wonder if Arnauld will find it easy to produce some! That's why what he says about the Church has nothing in common with these meditations ·of mine·, and I hope he isn't willing or able to say that *anything* in them could be called heretical in any Church at all.

However, if the church he belongs to were so quick to censure, that would be a warning to us to be on our guard. 'As soon as you want to produce some meditation having the slightest connection with religion and going a little beyond what is taught to children', ·the warning would say·, 'you'll be in danger of getting into trouble unless you have some Father of the Church as an authority who explicitly says the same thing.' And even the agreement of such an authority might not completely remove the sense of being in danger, especially when one doesn't have the means to ensure that one will be dealt with gently.

[In a postscript sent two days later, Leibniz asked the Count to remove the passage indented here, before sending the letter on to Arnauld. He was afraid, he wrote, that Arnauld might think that the Roman Catholic church was being attacked, which was not all Leibniz's intention. He asked the Count to replace that passage by this:]

And least of all in Arnauld's communion, where the Council of Trent as well as the Popes have very wisely settled for •censuring opinions that seem *clearly* to *contain* things contrary to faith and morals, and •not attending in detail to any *philosophical consequences* of the opinion. If the censure of opinions *did* bring in their ·remote· philosophical consequences, •the Thomists would appear to be Calvinists (according to the Jesuits), •the Jesuits would appear to be Semi-Pelagians (according to the Thomists). . . . and •both groups would be destroying liberty (according to certain other theologians) [Leibniz names them], and quite generally •every absurdity would appear to be an atheistic proposition, because one can demonstrate that it would destroy the nature of God.

END OF REPLACEMENT PASSAGE

If you weren't a ruler whose learning is as great as his moderation, I'd have taken good care not to tell you of these things; but as things are you are the best person for this role, and since you have been good enough to act as the •intermediary in this exchange, it would be imprudent of us to choose another •referee. [Leibniz is saying: 'You have accepted •one role in this debate, please now accept •another.'] When what's at issue concerning a few propositions is not 'Are they true'

but rather 'What do they imply?' and 'Could the Catholic Church allow them?', I don't think you will approve of people being crushed for so little reason. But perhaps Arnauld •spoke in these harsh terms only because he thought I would admit the consequence that he rightly considers terrifying, and •will change his language after my clarification. His fair-mindedness can contribute to this as can your authority.

4. Leibniz to the Count, for the Count's eyes only, 12.iv.1686

I have received Arnauld's opinion, and I think it is worthwhile to *try* to cure him of his mistake by means of the enclosed paper in the form of a letter to you; but I confess that in writing it I had to fight hard not to laugh at him—or to express pity for him, when I saw that the poor old chap seems to have lost part of his understanding and can't help exaggerating everything, just like depressed people for whom everything they see or imagine appears black. Although I have dealt with him very moderately, I have let him know gently that he is wrong. If he is kind enough to rescue me from the errors that he thinks he sees in my writings, I would like him to omit the personal reflections and harsh expressions that I haven't repeated in this letter out of the respect that I have for *you* and the regard that I have had for the good man's ability. Yet I wonder at the difference that exists between our self-appointed ascetics and the men of the world

what Leibniz wrote next: *qui n'en affectent point l'opinion et en possèdent bien d'avantage l'effect.*

what that means: who don't parade an opinion about it and have more of its effect.

perhaps his point is: who don't announce any views about the world (as the ascetics do) and who are affected by the world in better ways than the ascetics are.

You are a sovereign prince, •a monarch•, yet you have shown for me an admirable moderation. Arnauld is a famous theologian whose meditations on divine matters should have made him gentle and charitable, yet he often comes across as proud, unsociable and harsh. I'm not astonished *now* that he has quarrelled so easily with Father Malebranche and others who were close friends of his. Malebranche had published writings that Arnauld attacked wildly, pretty much as he is doing with me; but the world hasn't always agreed with him. Still, I should take care not to stir up his bad temper. That would deprive us of all the pleasure and satisfaction

that I had expected from a mild, reasonable exchange of views. I think he was already in a bad mood when my paper reached him, so that he felt the paper to be an imposition, and replied to it with a flat rejection as a way of punishing me for giving him trouble. If you had time to think about the objection he is raising to my work, I'm sure you couldn't help laughing when you saw how little reason there is for his tragic exclamations—very much as one might laugh at an orator who keeps saying, 'O sky, O earth, O seas of Neptune!' [quoted (in Latin) from the early Roman comic poet Terence]. If my thoughts contain nothing more shocking or difficult than the point that Arnauld finds objectionable, I am happy! Let me explain why.

From my thesis that the individual notion or thought of Adam contains everything that will happen to him and to his posterity, Arnauld infers that God doesn't *now* have any freedom where the human race is concerned. So he pictures God as being like a man who makes each decision in the light of the state of affairs right then; whereas really God foresaw and regulated everything from all eternity, and chose from the outset the whole successive course of events and the causal links amongst them; so that he didn't merely decide that there would be

an Adam,

with that being the whole content of his decision, but rather decided that there would be

this Adam,

whom he foresaw as doing such-and-such things and having such-and-such children, so that all these later developments were included in the scope of the initial divine decision. And this divine providence, regulated through the whole of time, *doesn't* interfere with God's freedom. On this point all theologians (except for some Socinians, who conceive of God along human lines) are in agreement. Arnauld

had a prejudice against my work, a prejudice that gave him a confused and ill-digested idea of it; and this made him anxious to find something—*anything*—shocking in my thoughts. There's nothing very surprising in all that, but I *am* surprised that this scholarly man has been led by it to say things that conflict with his own insights and opinions. In the heat of the debate he seems almost to lean towards the dangerous Socinian dogma that destroys God's sovereign perfection; but I am too fair-minded to think that he actually accepts it!

Every man who acts wisely considers all the circumstances and relationships of the decision he is taking—or as many of them as he can foresee. Won't the same thing be true of God? He sees everything perfectly and at a single glance; can he have made any of his decisions without taking into account everything that he foresees, *i.e. everything*? And can he have chosen an Adam who is thus-and-so without also considering and deciding everything that is connected with him? So it is *ridiculous* to say that this free decision of God's deprives him of his liberty. Otherwise one could be free only by being constantly undecided!

So there are the thoughts that Arnauld imagines to be 'shocking'. We'll see whether he can *infer* from them something worse! But my most important thought on the subject is that a couple of years ago he wrote to you explicitly stating that one wouldn't give a man a bad time over his philosophical opinions if he belonged to their Church or who wanted to join it; and now we see him forgetting this moderate attitude and getting worked up over a trifle. So it is dangerous to throw in one's lot with such people, and you'll see how necessary it is to take precautions. It was partly with that in mind that I communicated these things to Arnauld, to sound him out and see how he would react; but 'touch the hills and they will smoke!' [This is a joking reference

to Psalm 104:32—likening the irritable Arnauld to a hill that God merely *touches* and turns it into a volcano.]. . . . Perhaps you'll have an opportunity to advise him that acting in this way rebuffs

people unnecessarily, so that from then on he may behave a little more moderately. . . .

5. Arnauld to Leibniz, 13.v.1686

I thought I should write to you directly to beg your pardon for giving you cause to be annoyed with my using unduly harsh terms to express what I thought of one of your theses. But I protest to you before God •that if I did something wrong it wasn't because of any prejudice against you, because I've never had reason to hold anything but a very favourable opinion of you (apart from the religion to which you have found yourself committed by your birth); •that I wasn't in a bad mood when I wrote the letter that upset you, because nothing is further from my character than the irritability that some people choose to ascribe to me; and •that it wasn't that I am too wedded to my thoughts and therefore shocked to see that you had opposing ones, because—I assure you—I have spent so little time thinking about these topics that I don't have fixed opinions on them. I beg you not to believe any of those explanations of my conduct, but to accept the real explanation of my tactlessness: it's simply that I am used to writing informally to the Count, because he kindly forgives me all my faults, and •on this latest occasion• I had imagined that I could tell him frankly what I hadn't been able to accept with in one of your thoughts, because I was sure •that this wouldn't be spread abroad, and •that if I had misunderstood your meaning you could correct me without its going any further.

But I hope that this same nobleman will consent to make peace for me. [Arnauld tells a story in which Augustine of Hippo offended a bishop by something he had written to someone else, robustly rejecting a theological opinion that the bishop happened to accept. Augustine sent him a message admitting that he had gone too far, and saying:] 'I beg him to forgive me; let him remember our former friendship and forget the recent offence. . . . Let him show, in pardoning me, the moderation that I lacked when I wrote that letter.'

I thought of dropping the issue between us, for fear of starting up our quarrel again; but against that I feared that it wouldn't do justice to your fair-mindedness. So I shall simply state the difficulties that I still have with this proposition: The individual notion of each person contains once for all everything that will ever happen to him.

I thought one could infer from this that the individual notion of Adam contained having-such-and-such-a-number-of-children, that the individual notion of each of these children contained everything he would do and all the children he would have, and so on. And from this I thought it could be inferred that although God was free to create or not to create Adam, given that he did choose to create him, everything that has happened to the human race since then had to and has to happen through a fatal necessity; or at

least that God has no more liberty regarding all that, given that he chose to create Adam, than he had liberty not to create a nature capable of thought, given that he chose to create me.

It does not seem to me that in saying this I have confused hypothetical necessity with absolute necessity. For on the contrary I never talk about anything there except hypothetical necessity [Arnauld's emphasis]. ·Of course it would be utterly weird to suggest that the history of the human race is absolutely necessary; but I even find it strange that all human events are as necessary (by hypothetical necessity from the single supposition that God chose to create Adam) as is the world's containing a creature that can think (by hypothetical necessity from the single supposition that God chose to create me). On this subject you say various things about God that don't seem to me to be enough to resolve my difficulty.

- (1) There has always been a distinction between •what God is free to do absolutely and •what he has bound himself to do by virtue of certain decisions already taken.
- (2) Socinians offend against God's dignity when, on the pretext of upholding God's liberty, they liken him to a man who makes a decision at a given time in the light of what is going on right then.
- (3) God's acts of the will are all inter-related, and shouldn't be thought of as separate from one another. So we shouldn't think of God's decision to create Adam as separate from all the other decisions he makes regarding Adam's children and the whole of the human race.

I agree with this too. But I still don't see that this—these three agreements—can help to resolve my difficulty. ·Here is a *prima facie* possible route towards agreement between

us. I honestly didn't take in that by 'the individual notion' of a person (e.g. of Adam), which you say contains once for all everything that will ever happen to him, you had meant this person considered as existing in the divine understanding; I thought you meant this person considered as existing in himself. It seems to me that we don't ordinarily think of the species-notion of sphere in terms of •what is represented • in the divine understanding, but in terms of •what it is •in itself; and I thought that this was the case for the individual notion of each person or of each thing.

However, now that I know that this is how you are thinking, I shall go along with it and explore whether this clears up the whole difficulty I have on the subject; but so far I can't see that it does. For I agree that the knowledge God had of Adam when he decided to create him included the knowledge of everything that has happened to him, and of everything that did or will happen to his posterity; and so taking the individual notion of Adam in this sense, ·namely as defined by what is in God's mind·, what you say about it is quite certainly true.

I likewise admit that the act of God's will that went into creating Adam was not separate from the act of will that went into all of Adam's history and that of the whole of his posterity.

But it seems to me that I am still left with the question that creates my difficulty:

Concerning the connection between •Adam and •everything that was to happen to him and his posterity—does that connection exist of itself, independently of all the free decrees of God or does it depend on those decrees?

How did God know everything that would happen to Adam and his posterity? Was this knowledge a consequence of (a) God's own free decrees ordering

everything that would happen to Adam and his posterity? Or was it rather a result of **(b)** •God's knowing all about •an intrinsic and necessary connection by which •Adam is linked, independently of God's decrees, with •what did and will happen to him and his posterity?

Unless your answer is **(b)**, I don't see how you can be right when you say that the individual notion of each person contains once for all everything that will ever happen to him, even when this notion is understood in terms of the contents of God's mind.

And it seems to me that you do take your stand on **(b)**. That's because I think it's your view that, in our way of understanding things, possible things are possible prior to all the free decrees of God; from which it follows that what is contained in the notion of any possible thing is contained there independently of all the free decrees of God. Now you suppose that God found among possible things a possible Adam along with individual details including, among other predicates, '... will in the course of time have a such-and-such a posterity'. Thus in your opinion there exists an intrinsic connection, so to speak, independently of all God's free decrees, between this possible Adam and all the individuals comprising the whole of his posterity—and not only •the people but in general •everything that was to happen to them. Now this, to be quite open about it, is what I can't understand. For it seems to me that according to you •the possible Adam whom God chose in preference to other possible Adams was linked to all the selfsame posterity as •the created Adam; because you hold—so far as I can judge—that •these are the very same Adam considered now as possible and now as created. Now, if that supposition is true, here is my difficulty.

Ever so many men—Isaac, Samson, Samuel, and so on—have come into the world only through God's very free decrees. So when God knew them along with knowing Adam, this knowledge didn't come from **(a)** their being contained in the individual notion of the possible Adam, independently of God's decrees. So it isn't true that all Adam's descendants were contained in the individual notion of possible Adam, since they would have had to be contained in it independently of God's decrees. Why? Because what is considered as possible must have all that one conceives of as belonging to it under this notion independently of the divine decrees.

This holds also for an infinity of human events that have occurred because of very particular orders of God—e.g. the Judeo-Christian religion and above all the Incarnation of the Divine Word [= 'God's coming into our world as a man']. I don't know how it could be said that all this was contained in the individual notion of the possible Adam.

And another point: I don't know how, when you take Adam as the example of a singular nature, you can conceive of many possible Adams. It's like my conceiving of many possible myselfs, which I certainly can't do. For I can't think of myself without considering myself as a singular nature, so distinct from anything else—actual or possible—that I can no more conceive of different myselfs than I can conceive of a circle whose diameters are not all of equal length. Why? Because these different myselfs would all be distinct one from another, otherwise there wouldn't be many of them. So one of these myselfs would necessarily not be me—which is plainly a contradiction.

Let me now apply to this myself what you say about Adam, and judge for yourself whether that is tenable. Among the possible beings that God found in his ideas there were many myselfs, one of which has the predicate •'is a family man and a physician' and another has •'is a celibate

theologian'. Having been chosen for creation, •the latter of those—the myself that now exists—contains in its individual notion 'is a celibate theologian', whereas •the former would have had in its individual notion 'is a family man and a physician'. [Arnauld ought to have written 'the former *has* in its individual notion' etc. The thesis he wants to engage with holds that possible individuals *have* notions with such-and-such content, whether or not they come to be actual through creation.] *Isn't it clear that there would be no sense in this way of talking? Because my myself is necessarily such-and-such an individual nature, i.e. has such-and-such an individual notion, it is no more possible to conceive of contradictory predicates in the individual notion of myself than it is to conceive of a myself distinct from myself. Here is the right inference for us to conduct:*

•If I had married instead of living in celibacy, I couldn't possibly have not been myself; therefore •the individual notion of myself doesn't contain either of these two states.

•This block of marble is the same whether at rest or in motion; therefore •neither rest nor motion is contained in its individual notion.

So it seems to me that I mustn't consider anything *x* as contained in the individual notion of myself unless

I would no longer be myself if *x* were not in me;

and anything *y* such that

y could be in me or not be in me without my ceasing to be myself

can't be regarded as being contained in my individual notion; even if God has so organized the world that *y* cannot be in me. That's how I see this matter, and I think it squares with everything that any philosopher in the world has ever believed. What encourages me to hold onto this view is that I find it hard to believe that it's good philosophi-

cal procedure to try to find out what we should think about •things' specific or individual natures by investigating how God knows •them. Divine understanding is the rule of the truth of things as they are in themselves [Latin *quoad se*], but while we are in this life it doesn't seem to me that it can be the rule of truth as far as we are concerned [Latin: *quoad nos*]. For what do we know at present regarding God's knowledge? We know that he knows all things, and knows them all by a single and very simple act that is his essence. When I say that we know this, I mean that we're assured that it must be so. But do we understand it? Don't we have to accept that however assured we are that it is the case, it's impossible for us to conceive how it can be the case? Or consider this:

God's knowledge is his very essence, wholly necessary and unchangeable; and yet he knows an infinity of things that he might not have known, because these things might not have been

- can we get our minds around that? The same holds true for his will, which is also his very essence and contains nothing that isn't necessary. And yet he wills and has willed from all eternity things that he might not have willed. [Arnauld's point would have gone through as well if he had said that God's knowledge is contained in his essence rather than that it is his essence, and similarly with God's will. But in each case the French is clear about it.] I also find many uncertainties in how we normally represent God as acting. Our picture of God's activity goes like this:

Before he willed the creation of the world, God surveyed an infinity of possible things of which he chose some and rejected others—many possible Adams, each with a long series of resulting people and events with which he is intrinsically connected. Any one of these possible Adams is connected with the items in his series in just the way that the created Adam is (as

we know) connected with the whole of his posterity. So this is the one among all the possible Adams that God chose; he didn't want any of the others.

I have already objected to the idea of many Adams, which is no better than the idea of many myselfs; but I shan't go into that again because I have a more fundamental difficulty. I declare that I honestly have no conception of these purely possible substances, i.e. the ones that God will never create. And I'm strongly drawn to the view that they are figments of the imagination that we create, and that when we talk about 'purely possible' substances—i.e. ones that are possible but not actual—all we can be talking about is God's omnipotence. [Arnauld's point seems to be: when we say that there is in God's mind a purely possible person who knows the works of Dante by heart, all we ought to mean by this is that God, being omnipotent, could have created such a person.] [Arnauld ends this paragraph with some difficult theological ideas, which amount to something like this: God's essence is purely active, which being a pure act doesn't permit there to be any possibility within it. The things he has created are not like God in that respect; in thinking about them we can find work for the distinction between 'what could happen' and 'what does happen'; and this gives us a notion of possible things that aren't actual, namely the notion of how an actual thing might have been different from how it actually is. Arnauld winds up:] I am convinced that although there is so much talk about these 'purely possible substances', no-one ever conceives of any of them except guided by the thought of one of the substances that God has created. . . .

Be that as it may, all that I want to infer from this obscurity and difficulty. . . . is this: If we want to discover the true notions, specific or individual, of the things that we know, we must look not to God, who dwells in a light inaccessible to us, but to the notions of them that we find in

*ourselves. Now, I find in myself the notion of an individual nature, since I find there the notion of myself. To know what is contained in this individual notion I have only to consult it, just as I need only consult the species-notion of sphere to know what is contained in it. How do I consult it? By looking for the properties that a sphere **couldn't** lack while still being a sphere (e.g. (i) having all the points of its circumference equidistant from the centre) and the properties that a sphere **could** lack while still being a sphere (e.g. (ii) being ten feet wide). That leads me to judge that (i) is contained in the species-notion of sphere and that (ii) is not. I apply the same rule to the individual notion of myself. I'm assured that as long as I think, I am myself. For I can't*

*think that I don't exist, or
exist without being myself.*

But I can think that I'll take a particular journey, or that I won't, while remaining quite sure that I shall continue to be myself in either case. So I am quite sure that neither of those options is included in the individual notion of myself. 'But didn't God foresee that you will take this journey?' Agreed. 'So it is beyond doubt that you will take it!' Agreed again. But that doesn't change my certainty that I shall always be myself, whether or not I take that journey. So I have to conclude that neither option enters into my myself [entre dans mon moi], i.e. into the individual notion of me. It seems to me that that is where one must stop, without resorting to God's knowledge to learn what the individual notion of each thing contains.

Those are the thoughts I have had about the proposition that had troubled me and about your explanation of it. I don't know if I have properly understood your thought, but at least I have tried. It is easy to go wrong in dealing with such an abstract subject; but I would be really sorry if you formed the unkind opinion of me that some people

have—they portray me as an irascible writer who can never refute people without pouring abuse on them and deliberately misrepresenting their opinions. That is certainly not my nature. I may sometimes express my thoughts too frankly. I may also sometimes not properly understand the thoughts of others (for I certainly don't think that I am infallible; and anyone who can go wrong sometimes does go wrong). But if only because of self-respect I wouldn't ever deliberately get them wrong; I regard it as utterly low

to bring dishonesty and trickery to bear in disputes over doctrinal matters, even with people we have no reason to be fond of, let alone disputes with friends. I think you want me to count you me among your friends. I can't doubt that you do me the honour of your friendship—you have given me too many signs of it. And on my side, I assure you that the fault of mine that I beg you once again to forgive results purely from •the affection that God has given me for you and •my perhaps immoderate zeal for your salvation.

6. Arnauld to the Count, 13.v.1686

I am very sorry to have given Leibniz cause to be so angry with me. If I had seen this coming I'd have taken great care not to say so frankly what I thought of one of his metaphysical propositions; but I ought to have seen it coming, and I was wrong to use such harsh language, not against him but against his opinion. So I thought I was obliged to ask his pardon, and I have done so very sincerely in the letter that I enclose, unsealed, with this. I really beg you to make my peace with this former friend whom I would be sorry to have turned into an enemy through my imprudence; but I'll be glad if it stops there and I'm no longer obliged to tell him what I think of his opinions. I am so overwhelmed

with other affairs that it would be hard for me to satisfy him, because these abstract topics require hard and lengthy concentration. [The rest of the letter—two book-pages—is mostly high-toned theological gossip, followed by a suggestion about a good tutor for the Count's grandsons. One part of the theological stuff is noteworthy:] This Lutheran minister that you speak of must have good qualities, but it's incomprehensible and reveals a truly blind prejudice that he can look on Luther as a man destined by God for the reformation of the Christian religion. He must have a low idea of what piety is if he finds it in a man like that—a wild-talking glutton. . . .

7. Leibniz's notes on Arnauld's letter about article 13, vi.1686

Arnauld writes:

I thought it could be inferred that although God was free to create or not to create Adam, given that he did choose to create him, everything that has happened to the human race since then had to and has to happen through a fatal necessity; or at least that God has no more liberty regarding all that, given that he chose to create Adam, than he had liberty not to create a nature capable of thought, given that he chose to create me. [page 12]

I had replied first of all that we need to distinguish absolute necessity from hypothetical necessity. Arnauld replies here—i.e. in his letter that I have in front of me as I compose these notes—that he is talking only about hypothetical necessity. This announcement changes the shape of the discussion. The term ‘fatal necessity’ that he had used is ordinarily taken to refer only to absolute necessity, which is why I was forced to bring in the hypothetical/absolute distinction; but now we can let that drop out of the discussion because of Arnauld’s announcement, especially since he doesn’t insist on ‘fatal necessity’ and allows an alternative: ‘through a fatal necessity, or at least . . .’ and so on. So it would be useless to argue over the **word**; but with regard to the **thing** we still have an argument to conduct. Arnauld finds ‘strange’ something that I seem to him to maintain, namely that

all human events are necessary by hypothetical necessity from the single supposition that God chose to create Adam, [page 12]

I have two replies to this. (1) I am supposing that what God chose to create was not an Adam whose notion is vague

and incomplete, but rather an Adam who is thus-and-so—determinate enough to be an individual. My view is that this complete individual notion—i.e. the complete notion of this utterly detailed and determinate Adam—includes relationships with the whole series of things and events. And this should seem all the more reasonable because Arnauld grants me here the connection that exists amongst God’s decisions, namely that when God decides to create such-and-such an Adam, he takes into consideration all the decisions that he is making concerning the whole sequence of the universe. . . .

(2) The *following-from* relation through which the events follow from the hypothesis is indeed always certain but it isn’t always metaphysically necessary in the way that (to take Arnauld’s example) it is metaphysically necessary that God in deciding to create me creates a nature capable of thought. Often the *following-from* is only physical—only a following-according-to-the-laws-of-nature—and rests upon some free decrees of God. That’s what is involved when something follows from something else according to the laws of motion or the moral principle that every mind will be drawn to what seems to it to be the greatest good. [In that passage, ‘physical’ means quite generally ‘having to do with how things go in the world’; its scope includes mental events even if they aren’t ‘physical’ in our sense. And ‘moral’ here means about the same as ‘psychological’.]

It’s true that when you put together the initial assumption of God’s decision to create Adam along with the divine decrees that bring about the less-than-metaphysical-following-from, turning all this material into a single antecedent, then all the upshots *do* follow absolutely from *that*.

Arnauld makes rejoinders here to these two replies (which I had already hinted at in my letter to the Count ·that he saw·); what he says should be considered. He assures me •that he thought my view was that all the events happening to an individual were inferred from his individual notion, in the same way and with the same necessity as the derivation of the properties of the sphere follow from its species-notion or definition, and •that I had been working with the notion of the individual in himself, without bringing in how he is present in God's understanding or will:

It seems to me that we don't ordinarily think of the species-notion of sphere in terms of •what is represented in the divine understanding, but in terms of •what it is in itself; and I thought that this was the case for the individual notion of each person or of each thing. However, now that I know that this is how you are thinking, I shall go along with it and explore whether this clears up the whole difficulty I have on the subject; but so far I can't see that it does.

[page 12]

... Let me explain why I think it necessary to philosophize in one way about •the notion of an individual substance and another way about •the species-notion of *sphere*. It is because the notion of a species contains only eternal or necessary truths, whereas the notion of an individual contains (viewed as possibilities) contingent states of affairs, ones involving the existence of things and ·what is the case at this or that particular· time; so that this notion depends on (viewed as possibilities) some free decrees of God, because such states of affairs all depend on God's decrees. Compare these two notions:

•The general notion of *sphere* is incomplete or abstract; i.e. it takes our thought only to the essence of the sphere in general, or the essence of the sphere in

theory, ignoring all particular circumstances; so that it comes nowhere near to containing what is needed for the existence of one individual sphere.

•The notion of the sphere that Archimedes arranged to have placed on his tomb is complete, and must contain everything that is true of that particular sphere.

That's why in individual or practical considerations we are concerned not only with •the thing's form, sphericalness, but also with •the material it is made of, •where and when it was made, and all the other details which, if fully followed out, would eventually take in the whole history of the universe. For the notion of the portion of matter from which this sphere is made includes all the changes that it ever did or ever will undergo. And in my view every individual substance always bears traces of everything that has ever happened to it and signs of whatever will happen to it. But what I have just said may suffice to explain my method of approach.

Now, Arnauld •declares that what I say about the individual notion of a person is certainly true if this 'notion' is understood in terms of what God knew about that person when he decided to create him; and he likewise •admits that the act of will to create Adam was not separate from the act of will God performed concerning what has happened to Adam and his posterity. But now he asks whether the connection between Adam and what has occurred to his posterity depends on God's free decrees or is independent of them. He puts it like this:

How did God know everything that would happen to Adam and his posterity? Was this knowledge a consequence of (a) God's own free decrees ordering everything that would happen to Adam and his posterity? Or was it rather a result of (b) an intrinsic and necessary connection by which •Adam is linked,

independently of God's decrees, with •what did and will happen to him and his posterity?

He doesn't doubt that I choose **(b)**; and indeed I can't choose **(a)** when this is put the way Arnauld puts it; but it seems to me that there's a middle way between these. He argues however that I must choose **(b)** because I consider the individual notion of Adam as possible—one of an infinity of possible notions from which God selected that one; and notions that are possible in themselves don't depend on the free decrees of God.

But here is where I need to express my thoughts a little better, as follows: The connection between •Adam and •the subsequent history of his posterity isn't independent of all God's free decrees, but it doesn't completely depend on them either—or anyway not in such a way that the explanation for each event's happening or being foreseen is a primary particular decree that God made concerning that one event. What I think is that there are a few free primary decrees—ones we could call 'laws of the universe'—which regulate the flow of events and which, when combined with the free decree to create Adam, are sufficient to bring about the consequence •of the subsequent history of the human race.... As for the objection that possible things are independent of God's decrees, I agree (though the Cartesians don't) that possibilities don't depend on God's *actual* decrees, but I maintain that possible individual notions contain possible free decrees. Suppose that our world were only possible and not actual; the full story of it would include

movements of bodies, regulated by
laws of nature, each of which depends on
free decrees of God;

and because those are features merely of a *possible* world, each of them is also merely possible—possible movements, possible laws, possible decrees. Because there is an infinity

of possible worlds, there is also an infinity of laws, some for one world and some for another, and included in the notion of each possible individual in each world are the laws of his world. The same thing can be said of miracles. These operations of God are out of the ordinary, but they nevertheless •fit into the general order, •conform to God's over-all plans, and consequently •are contained in the notion of this universe. That is because

- this universe is a result of those plans; just as
- the idea of a building results from the aims or plans of the man who undertakes it, and
- the idea or notion of this world is a result of God's plans considered as possibilities.

For everything must be explained by its cause, and the cause of the universe is God's aims. Now each individual substance (according to me) expresses the whole universe in accordance with a certain viewpoint, so it also expresses the miracles I have mentioned. All this holds for the general order, for God's plans, for the sequence of events in this universe, for •any• individual substance, and for miracles, whether they are being thought of as they actually are or only as possibilities. The whole scheme will also fit any other possible world, although the plans for our world have been preferred •by God•.

What I have just said about God's plans and about the primary laws clears the way for us to believe—*without eliminating freedom and contingency*—that this universe has a principal or primary notion of which particular events are merely consequences. Whatever has happened was certainly going to happen, but that fact doesn't rule out freedom, because the certainty of events is partly *based on* free acts. Now, every individual substance of this universe expresses in its notion the universe it belongs to. And God's decisions regarding everything else are included not only in the premise

•God decided to create this particular Adam,
but also any premise of the form

•God decided to create individual substance *x*,
where *x* can be any substance you like. That's because it is
in the nature of an individual substance to have a notion so
complete that it implies everything one can attribute to that
substance, and indeed, because of the connections among
things, implies everything one can attribute to *anything* in
the universe. Still, if we are to be accurate about this we
should say that this is not right:

•All God's other decisions are consequences of his
decision to create this Adam;
and that this *is* right:

•God's decisions regarding Adam *and* other particular
things are all consequences of his *one* decision
regarding the whole universe and of *the* main aims
that determine the primary notion of the universe and
establish within it the general and inviolable order to
which everything conforms.

(And there's no need to leave miracles out of this. They are
undoubtedly in harmony with God's main aims, although
they sometimes conflict with the restricted maxims that are
called 'laws of nature'.)

I had said that the premise from which all human events
can be deduced is not simply the proposition that God
created a vague Adam, but rather the proposition that God
created a particular Adam fully equipped with details and
chosen from amongst 'an infinity of possible Adams' [page 7].
That gave Arnauld an opening for the not unreasonable
objection that it's as impossible to conceive of many *Adams*,
taking Adam as an individual nature, as to conceive of many
*myself*s. I agree; but in speaking of many Adams I wasn't
taking Adam as one determinate individual. Let me explain.
When we think about *some* of Adam's predicates, for instance

- is the first man,
- is placed in a garden of pleasure,
- has one of his ribs used by God to make a woman,

and other such things conceived of in a general way (i.e.
without mentioning Eve, Eden or other details that complete
his individuality), we may call the person to whom these
predicates are attributed 'Adam', but we haven't done enough
to determine the individual. Why not? Because there can be
an infinity of Adams, i.e. of possible people who differ one
from another but all fit the description we have given. Far
from disagreeing with Arnauld's objections to this plurality
of one and the same individual, I had myself these very
objections in an effort to make it better understood that the
nature of an individual must be complete and determinate.
Indeed, what Aquinas taught regarding *intelligences* is
something that I am convinced is true of *everything*, namely
that there can't possibly be two individuals that are entirely
alike, differing only in number [i.e. differing only in that there
are two of them—*one* and *the other*]. So when we are considering
whether all human events follow from the assumption of the
existence of Adam, we mustn't think about this in terms of an
indeterminate Adam, i.e. a person having certain of Adam's
attributes; rather, we must attribute to Adam a notion so
complete that everything that can be attributed to him can
be deduced from it. And there's no reason to doubt that *God*
can form such a notion of him, or rather that *God* finds it
already formed in the domain of possible things, i.e. in his
understanding.

It also follows that if someone had a different life-history
he wouldn't have been our Adam, but someone else. . . . It
seems clear to us that this block of marble brought from
Genoa would have been exactly the same if it had been left
there, but that is because our senses permit us to make only
superficial judgments. But *deep* down the truth is that,

because of how things are inter-connected,

if the least thing had happened differently from how it actually did, the whole universe with all its parts would have been different—it would have been another universe right from the outset.

This doesn't imply that events are •necessary; but that they are •certain, given the choice that God made of this possible universe, the notion of which includes this sequence of events. I hope that what I'm about to say will be able to win even Arnauld's agreement. [Leibniz proceeds, rather elaborately, to make a simple point: A period of my life when I was in Paris was followed by one when I was in Germany; something has to *make it the case* that this was *one* person who was first in one place and then in the other, i.e. serve as a *reason* why this was the same person all through. Because:] if there is no reason, one would be as justified in saying that it is another person. I can answer the question

‘*Why am I convinced* that this was a single person all through?’

by saying that my subjective experience has convinced me of this. But we also want an answer to the question

‘What *makes it the case* that this was a single person all through?’

[Leibniz characterizes these questions as *a posteriori* and *a priori* respectively, using these terms in now-obsolete senses, marking the difference between reasons for believing that P and reasons for P's being true. On page 33 he associates that with the difference between the ‘marks’ and the ‘causes’ of something's being the case.] Now, the only possible answer to the second question is that my attributes in the ‘Paris’ period as well as those in the subsequent ‘Germany’ period are predicates of one and the same subject, and are therefore present in the same subject. Now, what does it mean to say that the predicate ‘is in the subject’ if not that the notion of the predicate is in some sense contained in

the notion of the subject? And seeing that from the start of my existence it could truly be said of me that •this or •that was going to happen to me, it must be accepted that •these predicates were laws contained in the subject, or in the complete notion of me which

- makes what is called *myself*,
- is the basis of the connection amongst all my different states, and
- God had perfect knowledge of from all eternity.

I think that should dispose of all the doubts, because when I say that the individual notion of Adam contains everything that will ever happen to him, I mean only what all philosophers mean when they say that *the predicate is present in the subject of a true proposition* [Leibniz says this in Latin]. It is true that the consequences of this doctrine—evident as it is—are paradoxes; but that is the fault of philosophers who do not take far enough the clearest notions.

... I agree with what Arnauld judiciously says about how cautious we should be in consulting divine knowledge as a way to learn what we should think of the notions of things. But what I have been saying here, rightly considered, would be valid even if we kept God out of it as far as we possibly can. It's enough that I can prove that there must exist a complete notion of Adam that contains all the events that occur to him; I don't have to say *also* that when God thinks about the Adam that he is deciding to create he sees these events in that notion. ·Here is the proof: Each of Adam's predicates either depends on others of his predicates or it doesn't; set aside all the predicates that do depend on others; the remainder—the basic predicates—make up the complete notion of Adam from which can be deduced, and thus explained, everything that is ever to happen to him. Obviously God *can* and indeed *does* form ·in his mind· a notion that is full enough to account for all the phenomena

concerning Adam; but equally obviously such a notion is possible in itself.

It's true that we shouldn't dig too deeply into questions about what God knows and wills, because of the great difficulties they involve; but we can expound the material that I have inferred relative concerning the present problem without getting into the difficulties that Arnauld has mentioned, e.g. the problem [page 14] of understanding how God's simplicity is compatible with the distinctions we must note in him—e.g. in distinguishing his understanding from his will. It is also very difficult [Arnauld on page 14] to give a full account of how God has knowledge that he might have *not* had, that is—to use a technical term—knowledge of vision. The point is that if future contingent acts didn't exist or happen, God would have no 'vision' of them. Even then, however, he would have **simple** knowledge of such items, and this knowledge would become **vision** when his will was added to it; so perhaps this difficulty comes down to the problem raised by God's will, namely the problem of how God is free to will. This certainly passes our understanding, but it's not something we need to understand in order to resolve our present problem. [For God to have 'simple' knowledge of future event E is for him to be aware of E as a possibility. For him to have 'vision'-knowledge of E is for him to know that it will in fact happen, and he'll know this when he decides to make E happen.] As for the way we conceive of God as acting in choosing the best from among many possibilities, Arnauld is right to find this unclear. Regarding this account—

There is an infinity of possible first men, each with a great succession of persons and events; and God chooses for creation the one who pleases him, along with his succession—

Arnauld seems to recognize that we are driven to adopt this, so it isn't as strange as he initially found it to be! To be

sure, he indicates that he is strongly drawn to the view that these purely possible substances are mere chimeras [*chimeres* = 'figments of the imagination']. I don't want to dispute this, but I hope that he will still grant me what I require. I agree that there's no reality in purely possible things except what they have in the divine understanding; so that Arnauld is, after all, visibly committed to expounding them in terms of God's knowledge, though he seemed earlier to think that to learn about them we should look into *them*, not into the mind of God. Even if I concede—this being something that Arnauld is convinced of and I don't deny—that our only way of conceiving something possible is through the ideas that do in fact exist in the things that God has created, that wouldn't hurt my position. [Leibniz does say *choses* = 'things', but presumably he means 'things' such as you and me.] For when I talk of possibilities I am satisfied if one can form true propositions from them. For instance, even if there were no perfect square in the world, we would nevertheless see that no contradiction is implied by the notion *perfect square*. If we totally rejected purely possible things, we would be destroying contingency; because if nothing is possible except what God has in fact created, what God has created is necessary given that he decided to create something; i.e. there is nothing that God could have created but didn't. [The phrase 'purely possible things' translates Leibniz's *purs possibles* = 'pure possibles', which has promoted an adjective to the rank of a noun, and correspondingly promoted an adverb to an adjective. Such promotions are much commoner in French than in English. On the other hand, 'purely possible substances' translates *substances purement possibles*, which hasn't promoted anything.] Finally, I agree that a good way to reach judgments about the notion of *individual substance* is to consider the notion I have of *myself*; just as in reaching judgments about the properties of a sphere it is necessary to consider the specific notion of *sphere*. [This

seems to involve a switch: from •studying a general notion by examining one instance of it to •studying a particular item by examining a general notion that it falls under.] However, the difference is great, for the notion of *myself*—like the notion of any other individual substance—is infinitely more extensive and hard to grasp than a species-notion such as that of *sphere*, which is merely incomplete. It is not enough for me to sense myself as a thinking substance; I would have to grasp firmly and clearly what distinguishes me from all other minds; but I have only a confused experience of that. This has the result that although it's easy to judge that the size of a sphere's diameter is not contained in the general notion of *sphere*, it is harder to judge whether the journey that I plan to take is contained in the notion of *me*. If the two tasks were equally easy, it would be as easy for us to be prophets as to be geometers! I'm not sure whether I shall take the journey, but I *am* sure that whether I take it or not I shall always be *myself*. What we are up against here, ·in the conviction that many questions about one's own future conduct are not yet *settled*·, is an old familiar opinion that shouldn't be confused with a clear notion or item of knowledge. These things appear to us to be not-yet-settled only because we can't recognise the advance indications of them in our substance. ·Here's an analogy·:

People who are guided only by their senses will brand as a fool anyone who tells them that the smallest movement starts a causal chain that runs as far as matter extends, because experience alone can't demonstrate this; though one becomes convinced of it when one considers the nature of motion and of matter.

It is the same here: if I pay heed only to my confused experience of *my* individual notion, I am staying away from any awareness of this connected chain of events; but when I consider the clear, general notions that are involved in it,

I find the chain. Indeed, when I pay attention to the notion that I have of *true proposition*, I find that every predicate—necessary or contingent; past, present or future—is included in the notion of the subject, and that's all I am asking for.

I even believe that this will open up a path to bring us together. That is because I think that the only reason why Arnauld was reluctant to accept this proposition is that he thought I was standing up for a connection that is •intrinsic and at the same time •necessary, whereas my actual view is that it is •intrinsic but not at all •necessary. It isn't necessary because, as I have by now sufficiently explained, it is based on free acts and decrees. The only subject-predicate link that I am talking about here is the one that occurs in the most contingent truths, namely:

There is always something to be conceived in the subject that serves to explain why this predicate or event pertains to it, or why this has happened rather than not.

But these reasons for contingent truths *incline without necessitating*. So it is true that I *could* not-take-this-journey, but it is certain that I *shall* take it. This predicate or event is not unbreakably linked with my other predicates conceived of incompletely or in a general way; but it is unbreakably linked with the complete individual notion of me, because I am supposing that this notion was created precisely so everything that happens to me can be deduced from it. This notion is certainly found objectively [Latin: *a parte rei* = (roughly) 'out there in the world'], and it is the only notion that picks out *myself* in its various states, because it's the only notion that can embrace them all.

I have such a high opinion of Arnauld's judgment, that I easily mistrust my own opinions or at least my expression of them when he finds fault with them. That is why I have closely tracked the difficulties he has raised; and having

made a good-faith effort to answer them, I feel that I'm not too far away from where he stands.

The proposition in question is extremely important and deserves to be solidly established. What's so important about it? Well, it implies that every soul is like a world apart, independent of everything else except God; that it is immortal and incapable of being acted on; and that everything that happens to it leaves a trace in its substance. This proposition also implies the truth about the nature of the commerce between substances, and particularly that of the union of soul with body. [In this context, 'commerce' and the French *commerce* don't refer to *commercial* dealings. One could speak of 'the interactions between substances', but be careful: that sounds causal, and Leibniz is on the point of saying that the *commerce* in question isn't causal.] This commerce doesn't conform to the ordinary hypothesis of the **physical influence** of the soul on the body, for every state of a substance occurs to it spontaneously; it is only a consequence of its preceding state and therefore not a consequence of any influence from anything outside it. It doesn't conform either to the hypothesis of **occasional causes**—i.e. the theory that when a change occurs in the soul it doesn't cause a change in the body but is the *occasion* of God's causing such a change. [Leibniz briefly attacks

'occasionalism' for its implication that God keeps fussily interfering with the course of events. Then:] But the soul-body commerce I have described does conform to the hypothesis of **concomitance**, which to me appears certain. What it says is that each substance expresses the entire sequence of events in the universe according to its particular view or relationship, which brings it about that they—the individual substance and the rest of the universe—exist in perfect harmony with one another, although there is no causal interaction between them. We do sometimes say that one substance 'acts on' another; but what is going on in those cases is not real causal influence, but just changes in the two substances of such a kind that the one that is 'acted on' comes to express the universe less clearly while the one that 'acts' comes to express the universe more clearly—each of these being part of the total event-series that is included in the substance's notion changes happening in conformity with the succession of thoughts embraced by its notion. . . .

These explanations will, I think, make the propositions in the summary I sent to Arnauld seem more intelligible, and perhaps even more solid and important, than they could have been thought to be at first.

8. Leibniz to Arnauld, vi.1686

As I have great regard for your judgment, I was delighted to see that you had moderated your criticism after seeing my explanation of the proposition that I consider important and you had found strange, namely that the individual notion of each person contains once for all everything that will ever happen to him. At first you took this to imply that from the single premise *God decided to create Adam* all other human events occurring to Adam and his posterity would have resulted through a fatal necessity, with God no longer being free to do what he wants with them, any more than he can *not create a creature that can think* after deciding to *create me*.

To this I had replied that because God's plans for this whole universe are interconnected in accordance with his sovereign wisdom, he didn't make any decision about Adam without making one about each thing in any way connected with Adam. What brings it about that God has made up his mind about all human events is not •his decision about Adam but •the decision taken at the same time about everything else, all this being in a perfect relationship with the one about Adam). I didn't see any 'fatal necessity' •in this, or anything contrary to God's freedom, any more than there is •in the uncontroversial hypothetical 'necessity' that even God is under, to carry out what he has decided.

In your reply you agree with me about this connection between divine decisions, and you have the honesty to admit that you had initially understood my proposition quite differently, because (using your own words):

It seems to me that we don't ordinarily think of the specific notion of a sphere in terms of •what is represented in the divine understanding, but in terms of

•what it is in itself; and I thought that this was the case for the individual notion of each person.[page 12]

As for me, I had believed that full and comprehensive notions are •represented in the divine understanding as •they are in themselves. But now that you know what my view is, you can go along with it and investigate to see if it clears up the difficulty; •and it seems that you ought to concede that it *does*•. You seem to recognize that my opinion—explained in this way, as concerning full and comprehensive notions as they exist in the divine understanding—is not only innocent but even unquestionable. Here is what you say:

I agree that the knowledge God had of Adam when he decided to create him included the knowledge of everything that has happened to him, and of everything that did or will happen to his posterity; and so taking the individual notion of Adam in this sense, •namely as defined by what is in God's mind•, what you say about it is quite certainly true. [page 12]

I'll look into the question of why you still see a difficulty here; but before coming to that I shall say a little about why the notions of species differ from the notions of individual substances in ways that are relevant to our discussion. The reason is this: the notions of species contain only necessary or eternal truths, which don't depend on God's decrees. . . ., whereas any notion of an individual substance,

which is complete and capable of uniquely identifying its subject, and which consequently includes contingent truths—truths of fact—and the individual details of time, place, and so on,

must also include free decrees of God, considered as possible, because such free decrees are the principal sources of

existences or facts; whereas essences exist in the divine understanding independently of any thought of God's will.

That will help us to get a better grasp of everything else and to clear up the difficulties that seem still to remain in my exposition, because you go on to say this:

It seems to me that I am still left with the question that creates my difficulty: Concerning the connection between •Adam and •everything that was to happen to him and his posterity—does that connection exist of itself, independently of all the free decrees of God or does it depend on those decrees? How did God know everything that would happen to Adam and his posterity? Was this knowledge a consequence of (a) God's own free decrees ordering everything that would happen to Adam and his posterity? Or was it rather a result of (b) •God's knowing all about• an intrinsic and necessary connection by which •Adam is linked, independently of God's decrees, with •what did and will happen to him and his posterity? [page 13]

You take it that I'll choose (b), because I said that God found among possible things an Adam who is detailed in such-and-such ways and who has among his predicates that of 'eventually having such-and-such a particular posterity'. And you think I'll concede that possible things are possible independently of any of God's free decrees. On the basis of this understanding of •my position regarding (b), you hold that •it has insurmountable difficulties; for there is, as you very rightly say,

an infinity of human events that have occurred because of very particular orders of God—e.g. the Judeo-Christian religion and above all the Incarnation of the Divine Word. I don't know how it could said that all this [which occurred through very free decrees of God] was contained in the individual notion

of the possible Adam, given that what is considered as possible must have all that one conceives of as belonging to it under this notion independently of the divine decrees.

[page 13] I've tried to give an exact account of your difficulty, and now I proceed to resolve it, I hope to your satisfaction. For it must indeed be cleared up somehow, because it can't be denied that there really is such-and-such a full notion of Adam, complete with all his predicates and conceived of as possible—a notion that God knows before deciding to create Adam, as you have just conceded. The dilemma you confront me with—'Choose (a) or (b)'—can be escaped by a middle way: the connection that I conceive of between •Adam and •human events is *intrinsic*, but isn't *necessary* independently of the free decrees of God. Why not? Because the notion of the possible Adam involves God's free decrees, considered as possible, whereas the actual Adam is an effect of those same decrees when they became actual. I agree with you against the Cartesians that possible things are possible independently of any of all actual decrees of God, but not always independently of those same decrees considered as possible. For the possibilities of •individuals or of •contingent truths contain in their notion the possibility of their causes, namely God's free decrees; whereas the possibilities of •species or •eternal truths depend on God's understanding alone without bringing in his will in any way, as I have already explained.

That might be enough; but to make myself better understood I shall add this. I think there was an infinity of possible ways of creating the world according to the different designs that God could form, and that each possible world depends •on certain principal plans—certain *ends*—that are exclusive to it, i.e. •on certain primary free decrees (conceived of as possible) or laws of the general **order** of

that possible universe, laws that fit it and determine the notion of the universe in question as well as the notions of all the individual substances that are to enter into it. That's because everything belongs to an **order**, even miracles, though they are contrary to some secondary maxims or 'laws of nature'. Thus, given that Adam was chosen, no human event that actually occurred could have failed to occur in exactly the way it did. But this is not so much •because of the individual notion of Adam (though it does contain all those events) as •because of God's plans, which are also included in this individual notion of Adam, and which determine the notion of this entire universe and consequently the notions of all the individual substances of this universe, including Adam. •All those notions come into it• because each individual substance expresses the whole universe to which it belongs. . . .

The objection of yours that I have just dealt with concerned the apparently-contrary-to-liberty *consequences* of •my view about the notions of individual substances; but I see that you have another objection that has to do with •that view *itself* •rather than with its supposed consequences•. It goes like this [not an exact quotation from Arnauld]:

Since I have the notion of an individual substance, i.e. the notion of *Myself*, I should look to *it*—and not to God's way of conceiving of individuals—to get the truth about individual notions. And when I do this, I clearly find in the individual notion I have of myself that I shall be myself whether or not I go on the journey that I have planned; just as I find in the species-notion of *sphere* that this notion doesn't determine how big a sphere is.

Let me be clear about this: I agree that although the connection between events is •certain, it isn't •necessary, and that I am free to go on this journey or not. The notion of myself does

contain *that I shall go on the journey*, but it also contains *that I shall go on the journey freely*. And in everything that can be conceived about me in general terms, i.e. in terms of essence or species-notion or incomplete notion, there is nothing from which it follows that I shall necessarily go on the journey (in the way it follows from my being a man that I am capable of thought); so if I don't go on this journey that won't conflict with any eternal or necessary truth. Still, since it is certain that I shall take the journey, there must be some connection between myself (the subject) and the carrying out of the journey (the predicate), because in a true proposition the notion of the predicate is always present in the subject. So if I didn't go on the journey there would be a *falsity* that would destroy •the individual or complete notion of myself, i.e. what God conceives of me or did conceive of me even before deciding to create me; because •this notion includes—as possibilities—

existences,

truths of fact,

God's decrees, on which facts depend.

But I needn't go into all that in order to make the point that if A is B then anything that isn't B isn't A either; so let 'A' stand for *Myself* and let 'B' stand for someone who will go on that voyage; then it follows that someone who won't go on that voyage isn't me; and this conclusion can be drawn simply from the certainty of my future voyage, with no need to attribute it to the proposition in question.

I also agree that if I am to judge concerning the notion of an individual substance, I would do well to consider the notion I have of myself, just as I need to consider the species-notion of *sphere* in order to judge concerning the properties of spheres—although there's a big difference here. For the notion of myself, like that of every other individual substance, is infinitely fuller and harder to take in than the

species-notion of *sphere*, which is incomplete and doesn't contain all the details needed to pin down one particular sphere. What am I? To grasp the answer to that it isn't enough for me to •feel myself to be a thinking substance; I would have to form a clear idea of what distinguishes me from all other possible minds, and that's something I have only a confused •experience of. The upshot of this is that while it is easy to judge that a sphere's size is not contained in the general notion of *sphere*, it's not so easy to judge with certainty (though it can be judged with a fair degree of probability) whether the journey that I plan to take is contained in the notion of me. If there weren't that difference, it would be as easy to be a prophet as to be a geometer! However, just as experience can't put me in touch with an infinity of imperceptible material things of whose existence I am convinced by general considerations about the nature of the body and of motion, so also •experience doesn't make me •feel all that is contained in the notion of me; yet I can know in a general way—through general considerations of what an individual notion is—that everything having to do with me is included in my individual notion.

Certainly, since God can and actually does form this complete notion whose content accounts for all the facts about me, this notion is *possible*, and it is the genuine complete notion of what I call *Myself*, by virtue of which all my predicates belong to me as their subject. So the whole proof could go through without any mention of God except as much as is necessary to indicate my dependence •on him•; but this truth is expressed more *strongly* when the notion in question is derived from its source in God's mind. Admittedly there are plenty of things in God's knowledge that we can't understand, but it seems to me that we needn't dig into those in order to resolve our problem. Moreover, there is no obstacle to our saying that

if in the life of some person (or in the course of this entire universe) something had happened differently from how it actually did, it would be another person (or possible universe) that God would have chosen—i.e. other than the actual person (or universe).

Furthermore, there must be an *a priori* reason (independent of my experience) that makes it true to say that it is I who was in Paris and that it's still I and not someone else who am now in Germany, and consequently the notion of myself must connect or include the different states. [•Leibniz means that there must be something that *makes it the case* that this was one person all through, as distinct from something that *convinces us* that it was one person all through. See the note on '*a priori*' on page 21.] Otherwise it could be said that it's *not* the same individual, though it appears to be. And indeed certain philosophers who didn't know enough about the nature of substance and of indivisible entities or entities *per se* have thought that nothing remains truly the same. And that is *one* of my reasons for holding that bodies wouldn't be substances if there were nothing to them but extension. [An entity *per se* (Latin for 'entity through itself') is something whose own inherent nature qualifies it as a single thing, in contrast with 'entity *per accidens*', something that happens to count as a single thing because of how it relates to people's interests, how its parts spatially relate to one another, or the like.]

I think I have now cleared up the difficulties involving the main proposition. But since you also make some weighty remarks about things I said in passing, I'll try again to explain what I meant by them.

I had said that all human events can be deduced not from the creation of an indeterminate Adam but from the creation of a particular Adam complete in all his details, chosen from among an infinity of possible Adams. You have two substantial things to say about this.

(1) You rightly say that it's no more possible to conceive of many possible Adams—taking Adam as an individual nature—than to conceive of many *myself* [*plusieurs Moi*]. I agree, but in speaking of 'many Adams' I wasn't taking Adam to be a determinate individual, but rather as someone or other conceived of in general terms, through features that seem to us to pin down Adam as an individual but don't really do so. For example, suppose Adam is thought of as someone who

is the first man,
is placed by God in a pleasure garden,
leaves the garden because of sin, and
has one of his ribs used by God to make a woman.

(We mustn't name Eve or Paradise in this, taking them to be determinate individuals, because then we wouldn't be trying to characterize Adam in purely *general* terms.) This doesn't pin down Adam as an individual; if *that* ·list of features· is what we take 'Adam' to stand for, there are many disjunctively possible Adams, i.e. many ·possible· individuals whom all of that would fit. And that will be true however long we make the list, i.e. whatever finite number of predicates (incapable of determining all the rest) we take. A notion that determines a certain ·individual· Adam must contain absolutely all his predicates, and it is this *complete* notion that determines general considerations to the individual [presumably meaning: 'offers a general description, piling on so much detail that eventually it fits only one possible individual']. I would add that I am so far removed from allowing a plurality of one individual that I'm quite convinced that what Aquinas taught regarding intelligences is true of ·individual substances· in general, namely that there can't possibly be individuals that are entirely alike, differing in number only [see note on page 20].

(2) You also question the reality of purely possible substances, i.e. ones that God will never create. You report being

much inclined to think that they are chimeras [= 'figments of the imagination'], and I don't oppose that if you mean by it (as I believe you do) that their only reality is in the divine understanding and in the active power of God. So you see that we *do* have to bring in divine knowledge and power in order to explain them properly! I also find what you say afterwards to be very solid:

No-one ever conceives of any 'purely possible substances' except guided by the thought of one or other of the substances that God has created

(or guided by ideas contained in ·the notion of· one or other of those substances). You go on to say:

Our picture of God's activity goes like this: Before he willed the creation of the world, God surveyed an infinity of possible things of which he chose some and rejected others—many possible Adams, each with a long series of resulting people and events with which he is intrinsically connected. Any one of these possible Adams is connected with the items in his series in just the way that the created Adam is (as we know) connected with the whole of his posterity. So this is the one among all the possible Adams that God chose; he didn't want any of the others. [page 15]

[In this quotation from Arnauld, Leibniz interpolated '(first men)' after each of the first two occurrences of 'possible Adams']. I admit this that is how I think about this matter, provided •that the plurality of 'possible Adams' is understood in the way I have expounded, and •that all this is taken in such a way that it squares with our conception of God's thoughts and operations as *ordered*. You seem to acknowledge that this line of thought comes naturally to—and even that it can't be avoided by—anyone who thinks a little about this subject. Perhaps it displeased you only because you thought that the 'intrinsic connection' that is involved can't be reconciled

with God's free decrees. Anything *actual* can be conceived of as *possible*, and if the actual Adam turns out to have a particular posterity, this same predicate can't be denied to him when he is conceived of as possible—especially given your concession that God has all these predicates in mind when he decides to create Adam. So he does have them, and I don't see that your remark about the reality of possible things contradicts this. For something to count as *possible*, according to me, all that is needed is that there *can* be a notion of it, even if only in the divine understanding—which is the land of possible realities, so to speak. Possibilities are all right as long as one can build them into true propositions, e.g. in judging that *A perfect square doesn't imply a contradiction*, when there is no perfect square in the world. If we entirely rejected purely possible things, we would be destroying contingency and liberty. Here is the argument for that:

- Nothing is possible except what God in fact creates;
so
- everything that God creates is necessary; and so
- when God wants create something, he has no freedom of choice about what to create.

All this makes me hope. . . .that in the end your thoughts will be closer to mine that they at first appeared to be. You •agree that God's decisions are interconnected; you •recognize that my article 13, when taken in the sense I gave it in my reply, is unquestionable. You •were rightly distressed at the thought that I was making the connection—e.g. between Adam and his posterity—independent of God's free decrees; but I have shown you that according to me the connection does depend on those decrees, and that it isn't necessary though it is intrinsic. You pressed an •objection to my saying that if I don't take the journey that I am supposed to take I shan't be myself, and I have explained how this

might be all right to say and how it might not. Finally, I have given a decisive argument—one that I think has the force of a demonstration—that always, in every true affirmative proposition, necessary or contingent, universal or particular, the notion of the predicate is somehow included in that of the subject—*praedicatum inest subjecto* [Latin], or I don't know what truth is!

[When Leibniz speaks of the 'terms' of a 'proposition', e.g. saying things like

- In the proposition *Adam sinned*, the terms of the proposition are Adam (the subject) and sinning (the predicate),

he **does not** mean anything like

- In the sentence 'Adam sinned', the subject is the noun 'Adam' and the predicate is the verb 'sinned'.

Rather, he means something more like

- In the fact that Adam sinned, the subject-ingredient is the man Adam and the predicate-ingredient is the activity of sinning.

So the language of 'propositions' and 'predicates' is about things and their properties, not about nouns and verbs.]

Now, I don't ask for any more connection here than there is out there in the world between the terms of a true proposition, and it's only in *that* sense that I say that the notion of the individual substance contains all the events it ever goes through and everything else that is ever true of it, even the ones that are commonly called 'extrinsic'—I mean such relational properties as *spending time in a garden* and *listening to a snake*., which the individual has only because of •the general connection of things and of •the fact that the individual expresses the entire universe in its own way. I say this because there must always be some *basis* for the connection between the terms of a proposition, and it can be found only in their notions. This is my great principle with which I believe all philosophers must agree. One of its upshots is the common axiom that when anything happens there's a givable reason why it happened like that rather than in some other way. In many cases this reason inclines

without necessitating, ·but nothing can happen without there being at least an inclining reason for it to happen; the alternative is· a state of perfect indifference, and that is a chimerical or incomplete supposition. [Those last seven words are an example of Leibniz's skillful though not always helpful use of extreme compression. What he means here is something like this: If you think you have a respectable conceptual picture of a state of perfect indifference then either •you are merely fantasizing or •you are thinking of something that isn't in a state of perfect indifference but you are leaving out whatever it is that tilts it in one direction.] Consequences that I draw from the above-mentioned principle take people by surprise, but that is only because they aren't accustomed to pushing through hard enough the things that they clearly know.

I should add that the proposition we have been discussing is very important and deserves to be firmly established. It implies that every individual substance expresses the entire universe in its own way, . . . i.e. according to the point of view from which it looks at the universe (so to speak); and that each of its states is an upshot (though free or contingent) of the preceding state. Thus each individual substance or complete entity is like a world apart, independent of everything except God; it's as though the world contained only God and this one substance. This is the most powerful demonstration that there is not only for

- (1) the thesis that our soul is indestructible, but also for
- (2) the thesis that our soul stores within itself traces of all previous states and
- (3) retains a potential memory ·of them· that can always be aroused, because
- (4) the soul is self-conscious—i.e. is familiar within itself with what everyone calls 'Myself'.

[It is not clear in the original whether (4) is offered as evidence for (3) or rather as what makes (3) true.] It's because of (3) that

- (5) the soul is capable of having moral qualities and is liable to receive reward and punishment, even after this life.

For immortality without memory—i.e. (1) without (3)—would be useless.

But this independence ·from everything except God· doesn't prevent commerce [see note on page 24] between substances. All created substances are being continually produced by the same sovereign being in accordance with the same plans, and they express the same universe; so what goes on in any one of them is in perfect harmony with what goes on in all the others, and that opens the way for us to say that one substance 'acts on' another. What makes it all right for us to say that at a given time *x* 'acts on' *y* is that at that moment *x* expresses more clearly than *y* the cause of or reason for the changes ·in both of them·. Here is a comparable example [spelling it out a little more fully than Leibniz does]:

We may accept a theory according to which motion is always relative, so that in any case of motion the rock-bottom fact is that the spatial relation between two things alters; down at that basic level there is no basis for saying of two things that one stays still while the other moves. But we *do* use the language of motion and rest—'the ship moves through the sea (which doesn't move)'—and this is an acceptable way of speaking, because it is governed by known criteria.

In my view *that* is how we must understand the commerce between created substances—*not* in terms of a real physical influence or dependence, which is something we can never think about clearly.

That's why many people, when thinking about the soul's union with the body and about whether a mind can act on or be acted on by another created thing, have been forced

to accept that **(a)** direct physical commerce [= outright causal influence] between them is inconceivable. But it seems to me that the hypothesis of **(b)** occasional causes [see page 24] doesn't give the philosopher what he wants, because it introduces a sort of continual miracle, with God constantly changing the laws of bodies on the 'occasion' of events in minds or changing the laws of minds so as to give them certain thoughts on the 'occasion' of the movements of bodies. This theory implies that God's ordinary dealings with the world involve ad hoc interferences that go far beyond maintaining each substance in its course of action and in the laws established for it. So the only hypothesis that gives the facts an explanation that is both intelligible (·unlike **(a)**·) and worthy of God (·unlike **(b)**·) is the theory of the **(c)** concomitance or harmony between substances. In my opinion, ·**(c)** isn't merely the best hypothesis we can find·; the proposition that I have just demonstrated makes **(c)** inevitable, rigorously *proved*. It seems to me also that **(c)** agrees much better with the liberty of thinking creatures than does either **(a)** the hypothesis of causal influence or **(b)** that of occasional causes. God created the soul in such a way that ordinarily he has no need of these changes. What happens in the soul comes to it from its own depths; it doesn't have to change course so as to fit what the body is doing, any more than the body has to adapt itself to the soul. With each of them obeying its own laws—one of them freely, the other acting without choice—they come together in the same phenomena. But the soul *is* the form of its body—as the Aristotelians say it is—because it expresses the states of all other bodies in accordance with their relations to its

own body.

It may be found more surprising that I deny that any bodily substance can act on any other. . . . But I am by no means the first to have taken this line; and anyway I put it to you that *physical causal influence* is a •play of the imagination rather than a •clear concept. If the body is a substance and not

- a mere phenomenon like the rainbow, or
- an entity that is 'united' only in the casual loose way in which a heap of stones gets to count as *one* heap,

then it can't consist of extension; and we have to think of it as involving something called 'substantial form', something that corresponds, in a way, to what we call the soul. I came to be convinced of this, *finally*, as though against my will—having first had views that were very different. But however much I agree with the Scholastics in this •general explanation of the principles of bodies—this metaphysical explanation of them, so to speak—I am as corpuscular as one can be when it comes to explaining •particular phenomena; 'explaining' those by· saying that 'the things have forms or qualities' is saying *nothing*. Nature should always be explained in terms of mathematics and mechanisms, provided one knows that the principles or laws of mechanics or of force ·used *in* the explanations· don't themselves depend on mathematical extension alone but on certain metaphysical reasons.

After all that, I believe that now the propositions contained in the summary that was sent to you will appear not only more intelligible but perhaps even more solid and important than you could initially have thought them to be.

9. Leibniz to Arnauld, 14.vii.1686 (unsent draft)

[The draft opens with a paragraph of rhetorical soothing and peace-making. Then:]

I would like to be able to defend my opinions as not only *innocent* [i.e. not in conflict with true religion] but also *true*. But I could be merely being wrong about something while still being on good terms with religion and with you, so self-defence on the score of truth isn't absolutely necessary, and I shan't conduct the defence with the same energy ·as I have put into defending the piety, the religious propriety, of my opinions·. You have kindly written to me with a clear indication of where my response ·to your preceding letter· leaves you unconvinced; I shall attach to this note a reply to your questions and doubts. I am not urging you to take the time to examine my reasons afresh: these abstract questions demand *time*, and I'm sure you have more important things to do with your time. I am sending these materials to you merely so that if some day you want to amuse yourself with them you'll be able to. I would have been hoping to benefit from this, myself, if I hadn't learned long ago to put •public benefit—which has a stake in how you spend your time—ahead of my •private advantage, though the benefit I could get from your thoughts would surely doubt be no small thing. I have already put your letter to the test, and I know well that your ability to penetrate into the heart of things, and to shed light on a dark subject, is virtually unmatched anywhere in the world. . . . Since you have had the goodness to point out very clearly where my response still hasn't satisfied you, I thought that you would not be displeased if I continued to explain myself.

But I see that if I'm to lead you into my thoughts I need to start higher up, with the first principles or elements of truths.

So: I hold that every true proposition is either •immediate or •mediate. An immediate proposition is one that is true by itself, i.e. a proposition whose predicate is **explicitly** contained in its subject; I call truths of this sort 'identical'. All other propositions are mediate; a ·true· proposition is mediate when its predicate is included **virtually** in its subject, in such a way that analysis of the subject, or of both predicate and subject, can ultimately reduce the proposition to an identical truth. That's what Aristotle and the scholastics mean when they say 'the predicate is in the subject'. It is also what the axiom 'There is nothing without a cause' comes down to; or rather ·the axiom· 'There is nothing for which a reason can't be given'—i.e. every truth of right or fact can be proved *a priori* by displaying the link between predicate and subject, though usually God is the only one who can understand this connection distinctly, especially in matters of fact, which finite spirits understand only *a posteriori* and by experience. [see note on page 21].

Those remarks, I think, pin down the nature of truth in general; if they don't, I don't know what truth is! ·Don't think that P's truth is to be explained in terms of how P relates to our experience. There are two reasons why that can't be the right story·. **(i)** Our experiences are marks and not causes of truth—i.e. they can indicate to us *that* something is true but they can't tell us *why* it is true·. **(ii)** And anyway truth must have some general nature, a nature that it has in itself independently of how it relates to us. Now, I can't conceive of anything that would present truth's nature

- better, or
- in greater conformity with the views of men, and even
- in greater conformity with of all our philosophers

than the explanation I have just given. But it seems to me that its consequences, which extend further than is generally realized, haven't been thought through. Now for every truth P that isn't identical there is a reason why P is true, an *a priori* proof that it is true. This holds for *every* truth, not only eternal truths but also for truths of fact: the only difference is that in •eternal truths the connection of subject and predicate is necessary, and depends on the possibility or impossibility of essences, i.e. on God's **understanding**, whereas in •truths of fact or existence this connection is contingent and partly depends instead on God's **will** or the will of some rational creature. Eternal truths are demonstrated by ideas or definitions of terms; contingent truths have no demonstration strictly speaking, but still they have their *a priori* [see note on page 21] proofs or their grounds, which provide certain knowledge of why the thing turned out this way rather than that. And to set out these grounds one must ultimately work one's way back to the will of a free cause, primarily to the decrees of God; his most general decree is to give creatures as much knowledge of his wisdom and his power as they are capable of; and that, in my view, is the source of all existences or truths of fact. What happens is that from an infinity of possibles God *chooses the best*. Herein consists the reconciliation of liberty with reason or certainty. [He means the reconciliation of •God's acting freely with •our certainty, given to us by our reason, about how he will act.] For God, being supremely wise, will never fail to choose the best; but he will still choose freely, because what he chooses is not necessary and doesn't contain existence in its essence or its concept independently of God's decrees, since the contrary is also possible; otherwise it would contain a contradiction.

Given the premise that in any proposition of fact the predicate is contained in the subject, though by a connection that depends on God's free decrees, it obviously follows that

the concept of each person or other individual substance contains once for all everything that will ever happen to it; for this person or other substance can be considered as the subject and the occurrence as the predicate, and we have established that every predicate of a true proposition is contained in its subject, or that the concept of the subject must contain the concept of the predicate.

[A preparation for this next bit: Suppose that you are at this moment exactly 3.7864 miles from someone else who is also reading Leibniz-Arnauld. Then the predicate

... is exactly 3.7864 miles from someone who is reading Leibniz-Arnauld

fits you, is true of you, is a 'denomination' of you; and it is 'external' in the sense that (we would ordinarily think) it could stop being true of you without any change occurring in you, e.g. through the other person's moving a foot further away or stopping reading Leibniz-Arnauld. Leibniz is going to contend that even *that* one of your predicates is contained in the concept of you.]

It also follows that even what the philosophers commonly call an 'extrinsic denomination' can be demonstrated from the concept of the subject, but the demonstration brings in the general connection of all things, which ordinary folk don't understand. Common people don't grasp, for example, that the least movement of the smallest particle in the universe concerns the entire universe; the smaller the movement and the particle, the less perceptible will be the corresponding changes in the rest of the universe, but there will always be a corresponding change. Finally, it follows from this great principle that every individual substance, or every complete being, is like a **world apart**, containing in itself everything that happens to every other substance. This doesn't happen through substances immediately acting on one another; rather, it comes from the concomitance of things—the sheer fact that the behaviour of individual substances falls into a single pattern—and from each substance's own concept,

by which God first made it and still continually preserves or produces it in perfect relation to all other created things.

Actually, what makes a concept C the concept of an individual substance or of a complete being is just this: C is such a complete concept that everything that can be attributed to the same subject can be deduced from it. [Another way of putting this: C is the concept of an individual substance if and only if anything that might be predicated of a substance either follows from C or is inconsistent with C.] That's what incomplete concepts don't have. The concept *royalty*, for example, is incomplete, and can be attributed to some subject without implying everything that can be said of the same subject. *Being a conqueror*, for example, doesn't follow from *being royal* or *being a king*; but it does follow from the concept of *Alexander the Great*, because that is the individual concept of an individual person, containing everything that can be attributed to the subject (i.e. to that individual), and everything that distinguishes him from every other individual.

It also follows that...there can't possibly be two individuals that are perfectly alike... Aquinas maintained this with regard to spiritual substances, but I think it is necessarily true for *all* individual substances... I agree that perfect resemblance occurs in incomplete concepts—for example, two perfectly similar •figures can be conceived—but I maintain that this can't occur with •substances, this being something that I clearly infer from the principles that I have laid down.

One of the weightiest consequences of these principles is the explanation of how substances have commerce with one another, and especially how •the soul perceives what happens in the body and conversely how •the body follows the volitions of the soul. Descartes settled for saying that God willed that the soul receive some sensation following certain movements of the body, and that the body receive

some movement following certain sensations of the soul, but he didn't try to explain this... But here now is the explanation of it; I am not offering it as a hypothesis, because I think I have demonstrated it. Since an individual substance contains everything that will ever happen to it, it can be seen that my subsequent state is a consequence (though a contingent one) of my previous state, and will always agree with that of other beings according to the hypothesis of **concomitance**, explained above by the fact that God who is the cause of them all acts by resolutions that are perfectly related to one another, so that there is no need to bring in

- a bodily impression, which is the common hypothesis of physical causes, or
- a particular action by God other than the act by which he continually preserves all things following the laws he has established, which is the hypothesis of occasional causes.

·There is no need for either of those, I repeat·, because concomitance by itself provides a complete explanation.

It would be hard say anything that could do more to establish the immortality of the soul in a completely invincible way—or so I believe, hoping that I'm not being deceived by my love of my own thoughts. Nothing can destroy the soul except God, because nothing act on it except God. It also follows that the soul keeps forever the traces of everything that has ever happened to it, though it may not always have occasion to recall them. These traces are absolutely independent of the body, like everything else that happens in the soul. The soul is like a mirror of the universe, and even a particular expression of God's omnipotence and omniscience. [In calling it a 'particular' expression Leibniz means to emphasize that this is just one substance's angle on God's omnipotence and omniscience; no two substances express or represent God's qualities in exactly the same way.] For it expresses everything, though one thing more distinctly

than another; and everything is accommodated to its will, although

how Leibniz finished this sentence: l'un avec moins de refraction que l'autre.

what that literally means: one with less refraction than another.

what Leibniz was getting at: ?

But what are we to say about individual substances that are not intelligent or animate? I admit that I can't get an answer to this question that I am comfortable with, any more than I can with the question of the souls of beasts. These are questions of fact, difficult to resolve. However that may be, if bodies are substances, they must have within them something corresponding to the soul, which philosophers have rightly wanted to call 'substantial form'. Something can't qualify as a *substance*, according to the concept of substance that I have just provided, just by being extended in this or that way; if there's nothing to bodies but how they and their parts are extended—facts about shapes, sizes, positions, etc.—then bodies are not substances but merely true phenomena like the rainbow [see note on page 44]; I can demonstrate this. If bodies are substance, therefore, substantial forms must necessarily be restored to them, whatever the Cartesians may say about them. It's true that the substantial forms that we'll have to admit into

general physics won't change anything in the phenomena: the facts about how bodies behave will always be explainable without bringing in forms, as also without bringing in God or any other general cause, because particular facts must be understood in terms of particular reasons, i.e. by applying the mathematical or mechanical laws God has established.

Since the entelechy—the source of a body's actions and undergoings that is called its 'form'—doesn't have memory or consciousness, it won't have what makes someone *the same person* in morals, making him capable of punishment and reward. *That* is reserved for rational and intelligent souls, who have very great privileges. It could be said that intelligent substances or persons express God more immediately than they express the universe, whereas bodies express the universe more immediately than they express God. [In that sentence, 'more immediately than' translates *plustost*, which more literally means 'rather than' or 'sooner than'.] For God is himself a thinking substance who is more intimately in touch with persons than with other substances, and joins with persons to form a society, the republic of the universe, of which he is monarch. This republic is the happiest and most perfect there can be. For it is the masterpiece of God's purposes, and we may truly say that all other creatures are made primarily to contribute to the splendour of that glory with which God makes himself known to spirits.

10. Leibniz to Arnauld, 14.vii.1686

[This letter—which unlike item 9 Leibniz *did* send—goes on at considerable length expressing Leibniz’s admiration for Arnauld, his sense of the importance of getting agreement with him, his gratitude to Arnauld for giving time to Leibniz’s work when there are other more urgent calls on his time. And so on. Then:] I must take this occasion to tell you of certain thoughts I have had since I had the honour of meeting you. [He reports his interest in a properly organized jurisprudence, which would be worthwhile for theoretical and practical purposes. His interest in mines, and some discoveries he has made relating to that interest, e.g. his discovery of how slate is formed. His researches into the history of Brunswick, including a recent discovery of a document seeming to imply that, contrary to common opinion, the Emperor Henry II did have sexual relations with his wife, Saint Cunegond. Then:] Also, I have often passed the time with abstract thoughts of metaphysics or of geometry. I have discovered and published a new method of *tangents*. [Leibniz goes into the technical reasons why his work on this topic is more powerful than that of two others whom he names; and also claims that his work shows that certain things that Descartes wanted to exclude from geometry really do belong there. He remarks that ‘the English’ have highly praised this work of his, and says that it constitutes a giant stride forward for ‘analysis’. Then:] And as for metaphysics, I claim to give rigorous proofs in it, using hardly any premises other than these two:

(1) the principle of contradiction,
 ·which must be all right, because· if it were false then two contradictory propositions could be true at the same time, and all reasoning would become useless; and

(2) the thesis that nothing exists without reason,

i.e. that every truth has its a priori proof, derivable from the notions of its terms; although *we* aren’t always able to achieve this analysis. I bring all mechanics down to a single metaphysical proposition; and I have ·established· many important geometrical propositions about cause and effect, and concerning ·geometrical· congruence, which I define in a way that lets me demonstrate easily ·and straightforwardly· many truths that Euclid handles in a round-about way. I should add that I don’t care for the procedure of those who when they run out of proofs resort to their ‘ideas’. They are relying on the principle that every vivid and clear conception is good, but they are misusing it. [·vivid and clear’ translates *claire et distincte*. The standard translation, ‘clear and distinct’, is wrong. See note on page 1. ·The next sentence expands what Leibniz wrote in a way that the ·small dots· convention cannot easily handle.] I contend that we oughtn’t to avail ourselves of any premise saying that we have a *clear* idea or item of knowledge unless we base this on ·*signs* of clarity, *criteria* for something to count as clear; a mere strong conviction that something in one’s mind is clear isn’t good enough; but it is all that the people I am criticizing here have to go by. Sometimes we think not with ideas but with mere *words*—ones that we wrongly think we have meanings for!—and this can lead us to form impossible chimeras ·in place of ideas·. The ·*sign* of a true idea, I hold, is that one can prove it to be ·an idea of ·something that is· possible—either *a priori* by conceiving ·its cause or reason, or *a posteriori* when experience tells us that ·it does exist in nature. That gives me my way of distinguishing ·real definitions from ·nominal ones: a definition is real when one knows that the thing defined is possible; any other definition is only nominal, and isn’t to be trusted. . . .

11. Leibniz to the Count, 14.vi and 2.viii.1686

I beg you to ask Arnauld certain questions, as though they were your own. **(1)** Does he really think it is so very wrong to say that every species, every individual thing, and every individual person has a certain perfect notion which includes everything that can be truly said about it; and that it is through this notion that God, who conceives of everything in an absolutely complete way, conceives of the thing in question? **(2)** Does he sincerely think that someone who held this opinion couldn't be tolerated in the Catholic Church, even if he sincerely denied the doctrine of fatal necessity that is *said* to follow from it? And you might also ask him (·if he says Yes to the second question·): **(3)** How does he reconcile that answer with what he has written in the past, that in the Church a man wouldn't be troubled for his views on this sort of thing? And also: **(4)** Casually condemning all sorts of opinions that have nothing in common with faith—isn't that rebuffing people with needless and untimely severity? [Leibniz then adds a paragraph defending the view of his that has caused all the trouble, among other things citing a thesis of Aquinas's which gives to his (Leibniz's) position a certain innocence by association [see page 29].]

[A fortnight later Leibniz wrote to the Count about a book that he had returned to him by post, and adding:] I took the liberty of adding to the parcel a letter and some documents

for Arnauld. And I cherish some hope that when he has read them his insight and sincerity may cause him to express complete approval of what had appeared strange to him at the outset. [There is more along the same familiar lines, including a renewal of the view that the church should and sometimes does tolerate errors, even ones 'that are thought to be destructive to the faith', if the person whose errors they are doesn't think that they have such an effect. For example:] The Thomists say that the Molinist hypothesis •destroys God's perfection, while the Molinists imagine that the Thomist doctrine of predetermination •destroys human liberty; but the Church hasn't yet ruled on this, so that neither group can be thought to be heretics or their opinions heresies.

[There is no evidence that the Count agreed to act as Leibniz's front man, and some that he wouldn't have been willing to do so. In this Leibniz-Arnauld context the Count seems to have written to Leibniz only twice more. One of the letters, about Leibniz's soul, will be reported in item 19 below (page 67. The other said:] I enclose a letter from Arnauld [item 12 below] which through some negligence has been here for two weeks. I have been too busy to read it; and anyway these matters are far too lofty and speculative for me.

12. Arnauld to Leibniz, 28.ix.1686

... Nothing could be more open and polite than the way you accepted my apologies. That was more than enough to make me decide to acknowledge sincerely that I am satisfied by your explanation of your thesis about the notion of an individual nature [here = 'individual thing']—the thesis that had at first shocked me. . . . I was especially struck by the argument that in every true affirmative proposition—necessary or contingent, universal or particular—the notion of the attribute is included somehow in the notion of the subject: the predicate is present in the subject.

The only difficulty that remains for me concerns the possibility of things, and your line of thought about the actual universe being the one that God chose to create, out of an infinity of other possible universes that he saw at the same time and did not will to create. But that isn't strictly relevant to the notion of an individual nature, and anyway it would take me too long to work out ways of making clear •my views on that subject—or rather •what I object to in the ideas of others because they seem to be unworthy of God; so you'll agree with me that I had better say nothing about it!

There are, however, two things in your last letter which strike me as important but which I don't clearly understand. Please clarify them for me. (i) You write of 'the concomitance or harmony between substances', and claim that we need this hypothesis if we are to explain •what happens in the union of soul and body, and •what it is for a mind to act on or be acted on by another created thing. I don't understand your account of this view, which you say conflicts both with •the thesis that soul and body act physically on one another, and •with the view that God alone is the physical

cause of these effects, and that soul and body are only their occasional causes. You say:

God created the soul in such a way that ordinarily he has no need of these changes. What happens in the soul comes to it from its own depths; it doesn't have to change course so as to fit what the body is doing, any more than the body has to adapt itself to the soul. Each of them obeys its own laws—one of them freely, the other acting without choice. [page 32]

You can make your thought better understood by examples. Someone wounds me in the arm. So far as my body is concerned this is only a bodily movement, but my soul immediately feels a pain that it wouldn't have felt if my arm hadn't been damaged. What causes this pain? You won't allow that my body caused it, or that it was caused by God's creating the pain on the 'occasion' of the damage to my arm. So it has to be your view that the soul itself causes the pain, and this is what you mean when you say that what happens in the soul on the occasion of the body comes from its own depths. Augustine was of this opinion, because he believed that bodily pain was nothing but the soul's sadness over the trouble of its body. But this is open to an objection:

On this view the soul must know that its body is in trouble before being sad about it. But it seems that in fact it's the pain that gives the soul its ·first· warning that the body is in trouble.

How are you going to respond to that? Let's take another example, in which my body makes a certain movement on the occasion of my soul. If I want to take off my hat, I raise my arm. This upward movement of my arm is not in accordance with the ordinary rules of movements. What

then is its cause? *It is that the spirits that have entered certain nerves have swollen them.* [This reflects the then-popular theory that human physiology involves ‘animal spirits’—an *extremely* finely divided fluid that transmits pressures through tiny cracks and tunnels—the body’s ‘hydraulic system’, as it has been called.] *But these spirits haven’t determined themselves to enter these nerves; they haven’t given themselves the movement that has driven them into these nerves. So who has given it to them? You won’t allow that God caused them to move on the occasion of my wanting to raise my arm. And you won’t admit either that the spirits are caused to move through physical influence from the soul, apparently because you think that no substance acts physically on any other. (ii) I would also like help in understanding this:*

If the body is a substance and not a mere phenomenon like the rainbow, or an entity that is ‘united’ only in the casual loose way in which a heap of stones gets to count as one heap, then it can’t consist of extension; and we have to think of it as involving something called ‘substantial form’, something that corresponds, in a way, to what we call the soul. [page 32]

This raises many questions.

(1) *Our body and soul are two substances that are really distinct. Now, if the body has a substantial form in addition to extension, one can’t imagine that they—the body and this substantial form—are two distinct substances. So what can this substantial form have to do with what we call the soul?*

(2) *Is this substantial form of the body •extended and divisible or •unextended and indivisible? If you say ‘the latter’, it seems to follow that the substantial form of the body is indestructible in the way our soul is. And if you say ‘the former’, the ·so-called substantial form· hasn’t done anything towards making the body in question intrinsically one rather than accidentally one like a heap of stones. What*

makes it hard to think of a merely extended body as intrinsically unitary is, precisely, its being divisible into an infinity of parts; and a substantial form won’t fix that if •it is as divisible as •extension itself.

(3) *Does the substantial form of a block of marble make it one? If so, what becomes of this substantial form when the block stops being one because it has been broken into two? ·There seem to be just two possible answers·:*

(a) *The substantial form is destroyed. But that’s impossible if this substantial form is itself a substance. One might say: ‘It isn’t a substance—it’s a state or property of the body’; but that would make it a state or property of extension; and it seems that you don’t accept that.*

(b) *The substantial form becomes two. But if this substantial form can go from being one to being two, why shouldn’t we say as much about extension alone without this substantial form?*

(4) *Do you assign to extension a general substantial form like the one certain Scholastics have accepted under the label ‘the form of corporeity’ [= ‘the form of bodyness’]; or do you hold that there are as many different substantial forms as there are different bodies, and as many species-forms as there are different species of bodies?*

(5) *We say that there is only one earth that we inhabit, only one sun that gives us light, only one moon that turns around the earth in so many days? Where do you place the substantial forms that make these statements true? Do you think, for example, that the earth, composed of so many different kinds of parts, gets its unity from a substantial form that it has all of its own? There is no indication that you think so. I’ll raise the same question about a tree, about a horse. And from there I shall pass to mixtures such as milk: it is made up of whey, cream and curds; does it have*

three substantial forms or only one?

(6) It will be said •that it's not worthy of a philosopher to admit entities of which we has no vivid and clear idea; •that we don't have any such idea of these 'substantial forms', and •that you yourself hold that they can't be proved by their effects, because you acknowledge that all the particular phenomena of nature must be explained by the corpuscular philosophy, and that introducing substantial forms into such explanations is 'saying nothing'.

(7) Some Cartesians have tried to find unity in bodies by denying that matter is infinitely divisible, saying that we must admit indivisible atoms. But I don't think that you share their opinion.

[Arnauld now switches to a new topic, Leibniz's paper 'Brief demonstration of a memorable error of the Cartesians', which Leibniz had sent to him along with the letters of July 1686.] I have studied your little article and found it very subtle. But be warned: the Cartesians may be able to answer you that your attack doesn't hurt them because it seems to assume something that they believe to be false, namely when a falling stone speeds up during its fall, it gives itself that increasing velocity. They will say •that this acceleration

comes from the corpuscles •that the falling stone displaces, which as they rise cause everything they find in their path to fall, and transfer to them a part of their motion; and •that it's therefore not surprising that body B, having four times the mass of body A, has more motion when it has fallen one foot than A has after falling four feet. It's because the corpuscles that have pushed A or B have communicated to that body motion proportionate to its mass. I don't say that this reply is correct, but I think you should at least work on it to see whether it achieves anything. And I would really like to know what the Cartesians have said about your paper. . . .

I don't want to distract you from any of your pursuits—even the minor ones—in order to deal with the two doubts that I have put to you. Deal with them as you please and at your leisure.

I would greatly like to know whether you have brought to the pitch of perfection two machines that you invented when you were in Paris: •a machine for doing arithmetic, which seemed to work much better than Pascal's, and •a watch that kept perfect time.

13. Leibniz to Arnauld (draft), about 30.ix.1686

The hypothesis of concomitance is a consequence of the notion I have of substance. In my view the individual notion of a substance contains everything that is ever to happen to it; and this is what makes the difference between •complete entities and •incomplete ones. [Incomplete entities might be such

items as the blush on someone's face, the height of a mountain, and so on. Elsewhere in this correspondence Leibniz writes only of incomplete notions, usually with his favourite example, the notion of *sphere*.] Now, since the soul is an individual substance, its notion or idea or essence or nature must include everything that is to

happen to it; and God, who sees it through and through, sees everything that it will *ever* do or have happen to it, and all the thoughts it will have. So, since our thoughts are only consequences of the nature of our soul, and arise in it by virtue of its *notion*, there's no point in requiring another particular substance to exert an influence—even supposing such influence made sense, which it doesn't. It's true that certain thoughts occur to us when certain bodily movements are happening, and certain bodily movements occur when we are having certain thoughts; but that is because each substance expresses the whole universe in its own way, and it can happen that one expression of the universe constitutes a movement in the body and another constitutes a pain in the soul. Some of our turns of speech seem to suggest that the soul acts on the body and vice versa, but that is just a manner of speaking. In any given case, ·we attribute activeness to substance x—calling it 'the cause'· of what happens in substance y—·because x's expression of the universe is clearer than y's·. Here is an analogous case [expanded a little in ways that small dots can't easily indicate]:

Here is a ship moving through the ocean; we have here **(1)** the movement of the ship and **(2)** an infinity of movements by the parts of the water. We *say* that the ship's movement causes the water's movements, but this can't be strictly objectively true. All motion is relative, so that the basic fact is just that some spatial relations between the ship and some particles of water have altered; and there is no mathematically precise basis for saying of anything that *it* moved while *the rest* didn't. But the clearest account we can give of what is going on says that the ship moves through the water and the water-particles move so as to fill by the shortest possible path each place that the ship vacates.

Although the ship is not an efficient physical cause of these effects, the idea of it is (so to speak) their final cause—or if you like their exemplary cause—in God's understanding. [For 'final cause' see the note in item 22 on page 3.] An exemplary cause in God's understanding is something that God steered by, had in mind as a picture of what he was aiming at, when engaged in his creative activity. If you want to learn whether something real exists in motion, try this thought-experiment: think of God as setting out to produce all the changes of location in the universe that would occur if this vessel were producing them by sailing through the water. If *that* is what he was aiming at, wouldn't we get precisely what we *do* get? It is impossible to establish any real difference.

Speaking in precise metaphysical terms, it is no more correct to say that ·the ship pushes the water to make these many circles that serve to fill in behind the ship than it is to say that ·the water is pushed ·by something· to make all these circles and that it pushes the ship to move accordingly. But our only way of accounting for all these circular movements is to say that God deliberately chose to make the water move in harmony ·with the movement of the ship·; and since it is unreasonable to bring in ·God to explain detailed facts, we bring in ·the ship·. Still, in the last analysis the harmony among the phenomena [here = 'the life-histories'] of all the different substances comes only from their all being produced by a single cause, namely God, who makes each individual substance express the decision he has made regarding the whole universe.

·Don't think of ship-in-water as a special case·. In *every* phenomenon, large or small, there is just one hypothesis that serves to explain clearly the whole phenomenon. That is what is going on when we explain pains in terms of bodily movements ·such as the puncturing of the skin by a knife·: we handle the situation in that way because it

provides us with something *clear*. And that is useful to us for acquiring or preventing phenomena. [The rest of this paragraph is extremely compressed. Here now is a fairly conservative translation of it, followed by a less dense paraphrase. Numerals are inserted as an aid to connecting the two.] However, **(1)** so as not to put anything forward without necessity, **(2)** all we do is to think; so **(3)** all that we can acquire are thoughts, and **(4)** phenomena are only thoughts. But because **(5)** not all our thoughts are efficacious, and **(6)** they are often useless for bringing to us others of a certain nature, and because **(7)** we can't possibly decipher the mystery of the universal connection between phenomena, **(8)** we must take notice, through experience, of those that bring them to us at other times. **(9)** And the use of the senses and what is called external action consists in this.

·WHAT LEIBNIZ WAS GETTING AT IN THAT PASSAGE·

(1) In any theoretical project it's a mistake to say things that you don't need to say. **(2)** Any account of *us* has to credit us with having mental states and performing mental actions (here called 'thoughts', for short, following Descartes); but that is all it has any need to say. We are under no pressure to credit ourselves with more than that. So **(3)** all that we can get—all that we can want or fear—are thoughts, states of our own minds. What about such phenomena as being cut by a knife or seeing a fine picture? **(4)** Those too are only thoughts; our attitudes to them are basically just attitudes to our having certain mental states—'thoughts' for short. **(5)** Plenty of our thoughts don't lead to anything, so far as we can tell; and **(6)** if, for instance, I want to avoid a sensation of pain that I think may be threatening me, I don't have in my repertoire any thought—any mental action—that will fend off that sensation. **(7)** All the events in my mental life are connected with one another in some grand over-arching plan or system; can't I consult *that* in order to learn how to

avoid this perhaps-coming pain? No! Working out the details of that plan or system is something I can't possibly do. **(8)** So the best I can do is to remember past occasions when pain seemed to threaten and I avoided it; I have to remember what I physically did on those occasions, i.e. remember what sensations I gave myself, to see if there is something I can do on the present occasion. Of the past occasions I can remember that were like the present one, the ones where I didn't suffer pain were ones where I gave myself the complex sensory state that goes with what I call 'putting up a shield in front of me'; that is a sensory state I can give myself now; I'll give it a try. **(9)** In all this I have taken what we ordinarily call 'consulting our senses to see what is going on in the world', and redescribed it in the more fundamentally truthful manner that reflects our being only things that think. From now on, I shall move from that basic level to the more usual and comfortable level at which we are said to have minds and bodies, or at any rate to be minds that have bodies, though there will be passing references to this idea on each of the next two pages and in some later passages·

·END OF DECOMPRESSION·

The hypothesis of the harmony among substances follows from what I have said about each individual substance containing for ever all the events that will occur to it, and expressing the whole universe in its own way—so that what is expressed in the body by a movement may be expressed in the soul by a pain. Since pains are only thoughts, it's not surprising that they should be consequences of a substance whose nature is to think. And if certain thoughts are repeatedly associated with certain movements, the reason is that God at the outset created all substances so that subsequently all their phenomena might correspond, with no need for two-way physical influence (which seems not even to make sense). Descartes may have been in favour of

this concomitance rather than the hypothesis of occasional causes; he didn't explicitly give his opinion on this point, so far as I know.

I'm surprised at your remarking [page 39] that Augustine expressed views like mine when he maintained that pain is nothing but the soul's sadness over the troubles of its body. This great man certainly probed deeply into things. But why does the soul feel that its body is in trouble? Not •through being causally influenced by the body, and not •through a message sent on this particular occasion by God. Rather, it is •because it's the nature of the soul to express what happens in bodies, being created at the outset in such a way that the series of its thoughts would harmonize with the series of movements.

The same can be said of the upward movement of my arm. What makes the spirits enter nerves in a certain way? I reply that the ordinary laws of motion are at work in the production of this effect both by •the impression made by •other• objects and by •the way the spirits and nerves are arranged within the body. But by the *general* harmony of things this whole •complex physiological• event occurs only when there is also occurring in the soul an act of will—the one to which we ordinarily ascribe the operation. So souls make no change in bodily order, nor bodies in the order of souls. (That is why 'forms' mustn't be used to explain natural phenomena.)

One soul doesn't cause any change in the thought-series of another *soul*, either. Quite generally, no individual substance has any physical influence on any other. . . . But it is all right to say things like 'An act of my will caused this movement of my arm' and 'That damage to my body causes this pain'. •Such a statement is acceptable if• one of the items expresses clearly what the other expresses more confusedly, and the statement casts in the role of the agent,

i.e. the cause, the one whose expression is clearer. All the more so because that's all we need in practice for acquiring phenomena—i.e. for getting the mental states and events that we want•. If •the item that we pick on as 'the cause•' isn't a physical cause, we can call it a final cause—or, to put it better, an *exemplary* cause, i.e. when God was deciding on the course of events in the universe as a whole, the notion of this item in God's understanding contributed to his decision about how things were to go in this particular case.

The other difficulty—about substantial forms and the souls of bodies—is incomparably greater, and I admit to being unsure what to think about it. First, one would have to be sure that bodies are •substances and not merely •true phenomena, like the rainbow. [That remark does not concern this:

Is this body •a single substance or rather •a collection?

It concerns this:

Does this body •exists in the real world independently of any facts about any minds rather than •existing only as a 'phenomenon', a complex fact about events in certain minds?

On the latter view, what would make a phenomenon *true* is a set of facts about the steady reliability with which the relevant mental events occur.] But if we take it that bodies *are* substances, I believe we can infer that bodily substance doesn't consist •merely• of extension or divisibility, •by the following line of argument•:

No-one would deny that two bodies at a distance from one another—e.g. two triangular tiles—are not really one substance. If they come together to make up a square, will their mere *contact* turn them into one substance? I don't think so! Now, *any* extended mass can be thought of as composed of two smaller masses or a thousand of them; all it has is **extension through contact**. So we'll never find a body that can be said to be truly one substance. It will always be a collection of many. Or rather, it won't be a real entity •at all—it won't even be a real *collection*•—because the same difficulty crops up with the parts making

it up. We'll never arrive at any real entity, because 'entities' that have parts have only as much reality as their constituent parts have. It follows from this that the substance of a body, if bodies have one, must be indivisible. I'm not concerned with whether it is called 'soul' or 'form'.

The same thing can be proved from the general notion of *individual substance* that you seem to favour. Here is how:

Extension is an attribute that can't make up a complete entity; no action or change can be deduced from it; it expresses only a present state, and nothing of the future or the past as the notion of a substance must do. When two triangles are found joined together, we can't infer from them how they came to be joined, because that could have occurred in many ways; and nothing that could have any one of many different causes is a complete entity—i.e. an individual substance.

But I grant that many of the problems you raise are very hard to solve. I think we have to say that if bodies have substantial forms—e.g. if animals have souls—then these souls are indivisible. . . . Are these souls then indestructible? I say Yes. According to Leeuwenhoeck [a notable pioneer in the use of the microscope] the •generation [= 'start in life'] of every animal is merely a transformation of an animal already alive; if that is right, then there's reason to think that •death is merely another transformation. But the human soul is something more divine: as well as being indestructible, it always knows itself and remains self-conscious. What about its origin? Well, we might suppose that it went like this:

When •this animate body was still in the seed [ovum or sperm], it had only an animal soul. When •it was

caused to take the human form, either **(1)** God destroyed that animal soul and brought into existence a rational soul to go with the human body, or **(2)** God transformed the animal soul into a rational soul.

This is a detail about which I don't know much. [Leibniz says that if **(2)** happens, the influence of God is 'out of the ordinary'; he doesn't explain how it can be *extraordinaire* if it happens every time a human being is generated.] I don't know whether the body, setting aside its soul or substantial form, can be called a substance. It may well be a machine, a collection of many substances, in which case I have to conclude that a •corpse is like a •block of marble in the way that both are like a •heap of stones, namely in being 'united' only by aggregation and thus not being substances. The same thing holds for the sun, the earth, and machines; indeed, apart from man there is no body about which I can say positively that it is a substance rather than a collection of many things or perhaps a phenomenon. Still, it seems to me certain that if there are bodily substances, human bodies aren't the only ones, and it appears probable that animals have souls although they lack consciousness.

In short, although I agree that the study of forms or souls is of no use in the natural scientist's study of particular facts, it is nonetheless important in metaphysics. Just as geometers don't worry about the composition of the continuum, physicists aren't troubled by the question of whether a ball is pushed by another ball or by God. It would be unworthy of a philosopher to admit these souls or forms without any reason, but there is an excellent reason, namely that without them it is incomprehensible how bodies can be substances.

14. Leibniz to Arnauld, 28.xi.1686

Since I have found something quite unusual in your sincere and open acceptance of certain arguments that I had used, I am bound to acknowledge and admire it. I did think that you might be somewhat affected by the argument from the general nature of propositions; but I admit that few people can appreciate such abstract truths, and you may be the only man alive who could so easily have seen the argument's force.

I would like to learn about your thoughts regarding the possibility of things, for they are certain to be profound and important, especially since it's a matter of speaking of these possibilities in a manner worthy of God. But this will be at your convenience. As for the two difficulties that you find in my letter, concerning **(1)** the hypothesis of the concomitance or harmony amongst substances and **(2)** the nature of the forms of bodily substances, I confess that they are considerable; if I could clear them up completely, I would think I could decode the greatest secrets of universal nature! Still, some progress is better than none. In discussing **(1)**, you expound quite well the point that you had found to be obscure in my view about concomitance. When the soul feels pain at the moment the arm is wounded, what is happening—and this is pretty much how you put it—is that the soul creates this pain in itself, this being a natural consequence of its own state or notion. It is amazing that Augustine, as you remarked, seems to have been saying the same thing in his thesis that the pain the soul feels in such cases is merely a sadness accompanying body's trouble. That great man did indeed have very solid and profound thoughts! But (it will be asked) how does the soul know of this trouble in the body? I answer that it isn't through

any impression or action of bodies on the soul. Rather, it happens because •the nature of every substance bears a general expression of the whole universe, and •the nature of the soul in particular bears ·at each moment· a clearer expression of what is happening just then in its body. That's why it is natural for it to register and know the states and events of its body by its own states and events. And it's the same for the body when it is adapted to the thoughts of the soul: when I will to raise my arm, that is at the very moment when the body is all set to carry this out by virtue of its own laws. That this happens at the exact moment when the will is inclined to it is due to God's having had this ·pair of events· in mind when he made his decision about the sequence of all events in the universe, thereby setting up the amazing but unfailing harmony between things. All these ·events· are merely consequences of the notions of the individual substances, each of which contains all the phenomena of that substance in such a way that nothing can happen to a substance that doesn't come from its own depths, but in conformity with what happens to another substance—although it may be that one acts freely while the other acts without choice. And this harmony is one of the finest proofs that can be given of the necessity of a sovereign substance that is the cause of everything. I wish I were able to express my ideas as clearly and decisively on the other question, concerning substantial forms. [The ensuing discussion relates to items **(1)-(7)** starting on page 40.]

(1) The first difficulty that you point out is that our body and soul are two substances that are really distinct; which seems to imply that one of them isn't the substantial form of the other. I reply that in my opinion our body

in itself, considered without the soul—i.e. considered as a corpse—isn't properly a substance, any more than a machine or a heap of stones—entities through aggregation—are substances. Besides, the last Lateran Council of the Roman Catholic Church, in 1512-17, asserts that the soul is truly the substantial form of our body.

(2) I accept that the substantial form of the body is indivisible, which seems to be what Aquinas thought too; and I also accept that no substantial form—and indeed no substance—can be destroyed or generated [here = 'driven out of existence or brought into existence by natural means']. . . . So substances come into existence only through an act of creation. What about animals that lack reason and so don't merit a new creation? I'm much inclined to think that the start in life of such an animal is merely the transformation of another animal that is already alive but may be too small to see, along the lines of the change that a silkworm undergoes, though in that case the animal *can* be seen both before and after the transformation—nature often does that, revealing in some cases procedures that it employs secretly in others. On this account, the souls of the lower animals have all been in existence since the beginning of the world. . . . whereas the rational soul is created only at the time of the formation of its body. It is reasonable that a rational soul should be different in this way, because it is capable of reflection and imitates in miniature the nature of God, making it totally different from the other souls that we know.

[Regarding this next paragraph: French does not distinguish 'one pair of diamonds' from 'a pair of diamonds'. It is all right to use 'one' throughout, and even to emphasize it, because the central topic of the paragraph is unity, oneness.]

(3) I believe that a block of marble may be only the same as a heap of stones and thus can't be regarded as a single substance. . . . Take for example two diamonds: in an inven-

tory they can both be covered by **one** collective name, listed as **one pair** of diamonds, even if they are miles apart; but we wouldn't say that this makes these two diamonds constitute **one** substance. And however close they are brought to one another, even to the point of contact, that won't bring them any closer to being **one** substance—matters of degree such as closeness have no place here. Even if after contact they were held together by some other body—e.g. by being set in **one** ring—that would only make what is called *unum per accidens* [Latin for 'one through contingent circumstances'], on a par with their being forced to move together. So I maintain that a block of marble isn't **one** complete substance, any more than the water in a pool together with all the fish would count as **one** substance, even if all the water with all these fish were frozen. . . . There's as much difference between a substance and an entity like that as there is between a man and a community—a people—an army—a society—a college. These are social constructs that contain an element of something imaginary, something contributed by our minds. Substantial unity—the unity possessed by **one** substance—is possessed only by a complete, indivisible and naturally indestructible entity. Why? Because the notion of a single substance contains everything that is to happen to it, and this can't be found in shape or in motion (both of which include something imaginary, as I could prove), but in a soul or substantial form such as the item one calls *Myself*.

Those are the only truly complete entities, as the ancients had recognized, especially Plato, who demonstrated very clearly that a substance can't be formed from matter. And this *Myself*, like its counterpart in each individual substance, can't be made or unmade by placing the parts nearer together or further apart. . . . I can't say for sure whether there are any genuine bodily substances other than the animate ones, but at least souls are useful in giving us through analogy some

knowledge of the others. [In the early modern period ‘animate’ (French *animé*, Latin *animatus*) could mean •‘alive’, as it does for us. But it could mean more strongly •‘breathing’, so that plants are not animate; or even more strongly •‘possessed of a soul or spirit etc., so that it might be open to question whether non-human animals are ‘animate’. This third sense, with all its vagueness, seems to be at work here.]

(4) All this may contribute to dealing with the fourth difficulty. Without troubling myself about what the Scholastics call ‘the form of corporeity’, I grant substantial forms to all bodily substances that are united more than just mechanically.

(5) What do I think about the sun, the globe of the earth, the moon, trees and similar bodies, even animals? Are they

- animate?
- substances?
- mere machines or aggregates of many substances?

I can’t give absolutely certain answers to any of those questions. But at least I can say this: If there are no bodily substances of the kind I defend, then bodies are nothing but *true phenomena*, like the rainbow. It’s not just that the continuum is infinitely •divisible; every particle of matter is actually •divided into smaller parts that are as distinct from another as the two diamonds; and since this goes on for ever, we’ll never arrive at a thing of which we can say ‘That really is **one** entity’ unless and until we find *animate machines* whose soul or substantial form creates substantial unity independently of any facts about spatial closeness. If there aren’t any of those, then apart from *man* there is nothing substantial in the visible world.

(6) The general notion of *individual substance* that I have presented is as lively [French *claire*] as the notion of truth; so the same holds for the notion of *bodily substance* and, therefore, the notion of *substantial form*. But even if this were not the case, •that wouldn’t disqualify my use of these

concepts, because• we are obliged to admit many things of which we don’t have sufficiently vivid and clear knowledge. I maintain that our notion of *extension* is even less vivid and clear, as witness the strange problems concerning the composition of the continuum; and it can even be said that *because of the actual subdivision of every particle of matter, bodies have no fixed and precise shapes*. The upshot is that if there were only matter and its states, bodies would be merely imaginary and apparent. Still, when we are trying to explain particular natural phenomena it is useless to bring in the unity of bodies, the notion of bodies, or the substantial form of bodies; just as it’s useless for a geometer who is trying to solve a particular problem to bring in the difficulties about the composition of the continuum. These topics are nevertheless important and significant in their place. All bodily phenomena can be explained mechanically—i.e. by the corpuscular philosophy, in terms of certain principles of mechanics taken as premises—without raising the question of whether souls exist; but when the analysis of the principles of physics and even of mechanics is carried the whole way •down•, these principles turn out not to be explicable purely in terms of the modifications of extension [= ‘in terms of facts about things’ sizes, shapes, movements, spatial relations and the like’]. We find that the nature of *force* already requires something else. [Why ‘already’? The thought is that quite early in our journey into the intellectual depths of physics—long before we have plumbed the depths—we encounter the concept of *force*, which **already** puts us in need of something other than the set of concepts tied to extension.]

(7) Finally, I recall that Cordemoy in his book *Distinguishing the Soul from the Body* thought he had to admit atoms—indivisible extended bodies—so as to have something definite as a candidate for the role of simple entity; but you were right in thinking that I wouldn’t agree. He seems to have recognized a part of the truth, but hadn’t

yet seen what constitutes the true notion of a *substance*; and *that* notion is the key to the most important knowledge. ·Something extended and absolutely indivisible would have to be infinitely hard; and· I consider infinite hardness to be no more consistent with divine wisdom than absolutely empty space is. But if there *were* atoms consisting of a shaped and infinitely hard mass of matter, an atom couldn't contain within itself •all its own past and future states, let alone •those of the whole universe.

Turning now to your remarks [page 41] about my objection to the Cartesian principle regarding the quantity of movement, I agree ·with what you say a Cartesian might say, namely· that a falling body accelerates because it is being pushed by some invisible fluid, like a ship that the wind drives along very slowly at first and then faster. But my demonstration doesn't depend on any hypothesis. Without going into the question of how the ·falling· body *gets* its speed, I take its speed ·at any time· as a given, and I say that

a one-pound body ·falling· with a speed of two degrees has twice as much force as

a two-pound body ·falling· with a speed of one degree, because it can raise a given weight twice as high. And I maintain that when two bodies collide the distribution of the ·post-collision· movement between them depends not on the quantity of •movement (as Descartes says in his rules) but on the quantity of •force. If Descartes were right about this we could have perpetual mechanical movement, as I now show. [Leibniz proceeds to argue that if Descartes's rules were correct, the falling 1kg weight could raise a second 1kg weight to a height such that when it fell back to the ground it could raise a third 1kg weight even higher, and so on, with surplus energy being generated at each stage. The details of proof are not given here because the preparer of this text hasn't been able to understand them. Apologies!

Having given his proof, Leibniz continues:] I have found that Descartes in some of his letters said—as you say he did—that when he was dealing with the ratios of ordinary moving forces he had deliberately tried to keep velocity out of it and to attend only to height. If he had remembered this while writing his principles of physics, he might have avoided the errors that he fell into regarding the laws of nature. What he succeeded in doing was **(i)** to exclude velocity where he could have kept it in, and **(ii)** to include it where ·he should have kept it out because· it leads to errors. I shall explain this. **(i)** Where forces that I call 'dead' are concerned—for example

- when a body makes its initial effort to fall without yet having acquired any impetus from any continuing movement, or
- when two bodies are as it were *balancing* one another, so that the first effort that each exerts against the other is a dead one

- it turns out that velocities are like spaces. On the other hand, **(ii)** when one considers the absolute force of bodies that have a certain impetus (and *they* are what we have to look at to establish the laws of motion), our estimate ·of the amount of force at work in a given body· must be made from the •cause or the •effect ·of its movement·—i.e. from •the height from which it must have fallen to attain this speed or •the height to which this speed can take it. And if one ·instead· introduced *velocity* into these cases, one would lose or gain a great deal of force without any reason [i.e. one would be telling a theoretical story in which force was lost or gained with no reason]. Instead of height one might presuppose a spring or some other cause or effect, which will always come down to the same thing, namely the squares of the speeds.

[Then a paragraph discussing a recent article in one of the journals defending Descartes against Leibniz. The defence is

thoroughly incompetent, Leibniz says, concluding:] I would therefore like my objection to be examined by a Cartesian who is a geometer and versed in these matters. [Finally, a

short paragraph of personal good wishes etc.]

15. Leibniz to the Count, 28.xi.1686

I take the liberty of asking you to arrange for the enclosed papers to be sent on to Arnauld. Because they deal with subjects that •depend upon pure intellect and •are far removed from the external senses, subjects that •are unattractive and •are usually scorned by the liveliest and most worldly-wise people, I shall say something here in favour of these meditations. I'm not doing this in the hope that you will give any of your time to *engaging in* them; that would be absurd of me, as unreasonable as wanting a general to study algebra. . . . All I want is to enable you to better judge what such thoughts aim at, what they are good for. . . . Sometimes they are not good for anything! The way they are generally conducted by the scholastics turns them into mere quarrels, hair-splitting, plays on words; but there *are* veins of gold in these sterile rocks. I state as a matter of fact that thought is the main and constant function of our soul. What naturally *perfects* us is whatever enables us to think more perfectly about the most perfect objects, •Why is that so? Why doesn't perfecting us equally involve our learning more about how the world works? Because • **we will always •think, but we won't always •live here!** The present state of our life forces us into a host of confused thoughts that don't make us more perfect. I include in this

the knowledge of customs, genealogies, languages; every item of historical knowledge of facts, both civil and natural; everything that helps us to avoid dangers and to manage the physical objects and the people in our environment, but doesn't enlighten the mind.

While someone is travelling •homewards•, it is useful for him to know the roads; but that isn't as important as knowing things relating to the functions that will be assigned to him when he gets home. Well, *we* have an assignment: we will eventually live a spiritual life in which we'll think much more about •substances separate from matter than we will about •bodies.

Here are two tradesman's examples that can help to draw a clear line between what •enlightens the mind and what •merely leads it on blindly. **(i)** A workman knows—from experience or from tradition—that if a circle has a 7-foot diameter its circumference will be a bit under 22 feet. **(ii)** A gunner knows—by hearsay or from often having measured it—that bodies are thrown furthest at an angle of 45 degrees. In each case we have the confused knowledge of a working-man who will make very good use of it in earning his living and serving others; but the items of knowledge that enlighten our mind are the *clear* ones, i.e. the ones that contain

causes or reasons, as when Archimedes proved the rule that underlies **(i)** and Galileo proved the rule that underlies **(ii)**. In short, the only thing that can perfect us is the knowledge of reasons in themselves—i.e. of necessary and eternal truths, particularly the ones that are the most comprehensive and have the most connection with the sovereign being. This is the only knowledge that is good in itself; everything else is bread-and-butter stuff which shouldn't be learned except from necessity, because of the needs of this life and in order to be better equipped for attending to the perfection of the mind after the means of living have been squared away. However, •the disorderly state of men and •their concern for 'earning a crust', and often •vanity too, cause them. . . .to focus on means and forget the end. Now, since what perfects our mind (apart from the light of grace) is demonstrative knowledge of the greatest truths through their causes or reasons, it has to be admitted that the most important of all •the sciences• is metaphysics—i.e. natural theology—which deals with immaterial substances, and particularly with God and the soul. And no-one can make much progress in that without knowing the true notion of *substance*. . . . Finally, these meditations provide us with consequences that are

surprising but wonderfully useful for freeing oneself from the greatest worries about

- how God works together with his creatures,
- how he knows in advance and commands in advance,
- the soul's union with the body,
- the origin of evil,

and other matters of this kind. I won't talk here about the great uses these principles can have in the human sciences; I'll just say that they elevate our mind to the knowledge and love of God, so far as nature helps us along that path, more than anything else does. I admit that all this is useless without grace, and that God grants grace to people who have never so much as *dreamed* of these meditations; but God nevertheless wants us not to neglect anything that is ours, and wants us to *use* the perfections he has given to human nature, when the time is right, and each according to his calling [here = 'his trade or profession or status']. He created us only so that we might know and love him, so we can't work enough towards that end or make a better use of our time and strength, unless we are occupied elsewhere by public affairs and the welfare of others.

16. Arnauld to Leibniz, 4.iii.1687

It is a long time [four months] since I received your letter, but I have been so busy since then that I couldn't answer it sooner. I don't clearly understand •what you mean by this 'clearer expression that the soul has of what is happening just then in its body' [page 46], of •how that ·expression· can bring it about that when my arm is injured my soul knows this injury before it feels pain from it. This same clearer etc. expression should therefore inform the soul of an infinity of other things occurring in my body—e.g. the goings-on of digestion and nutrition—of which it actually knows nothing. As for your statement that although my arm rises when I will to raise it, it's not that my soul causes this movement in my arm, but rather:

When I will to raise my arm, that is at the very moment when the body is all set to carry this out by virtue of its own laws. That this happens at the exact moment when the will is inclined to it is part of the amazing but unfailing harmony between things that God set up when he made his decision about the sequence of all events in the universe.

*That strikes me as a rewording of the thesis that •my will is the **occasional** cause of my arm's movement, and that •God is the real cause of it. The occasionalists don't say that*

•God does this in time, through a new act of will that he exercises each time I will to raise my arm;

but rather that

•through a single act of the eternal will he has chosen to do everything that he has foreseen to be needed for the universe to be what he judged it should be.

Isn't that what your thesis boils down to when you say that what causes the movement of my arm when I will to raise

*it is the amazing but unfailing harmony among things that comes from God's having had it in mind in advance when he made his decision about this succession of all things in the universe? ·I think so, and here is why·. This 'having in mind' by God couldn't have made something happen without a real cause; so we must find the real cause of my arm's movement, You won't allow that it is my will. And I don't think you will allow, either, that a body can be moved by itself or by another body as a real and efficient cause. So you'll have to say that this 'having in mind' by God is itself the real and efficient cause of my arm's going up; you yourself call this having in mind God's 'decision', and decision is the same as will; therefore, according to you, every time I will to raise my arm, the real and efficient cause of this movement is God's will—which is just what the **occasionalists** say·.*

Now for the problem numbered (2) [by Arnauld on page 40 and by Leibniz on page 47]. I now know that your position is quite different from what I had thought. I had thought you were arguing like this:

Bodies must be true substances;

They can't be true substances without having a true unity;

They can't have true unity without having a substantial form;

therefore

The essence of body can't be extension; every body, as well as being extended, must have a substantial form.

To this I had objected that a substantial form that is divisible—and according to the friends of substantial forms

most of them are divisible— can't give a body the unity that it would otherwise lack. You agree with that, but claim that every substantial form is indivisible and indestructible, and can't be brought into existence in any way except through a true act of creation. Now see what follows from this. **(i)** A divisible body of which each part has the same nature as the whole—such as metals, stones, wood, air, water and other liquids—has no substantial form. **(ii)** Plants have no substantial form either, because the part of a tree that is either planted in the ground or grafted on to another tree remains a tree of the same species as before. **(iii)** Therefore only animals will have substantial forms. Therefore, according to you, only animals will be true substances. [Here 'animals' translates animaux, which for Arnauld, Leibniz and many others includes humans, unlike brutes and bêtes.]

Yet you aren't completely sure of this, because you say that if the lower animals [brutes] have no soul or substantial form, it follows that except for man there's nothing substantial in the visible world. You base this on your claim that substantial unity requires a complete, indivisible and naturally indestructible entity, and that has to be a soul or substantial form such as what is called myself. All this amounts to saying that none of the bodies whose parts are only mechanically united are substances; they are only machines or aggregates of many substances.

I'll take this last point first. Frankly, there is nothing to it except a quibble over words. Augustine sees no difficulty in recognizing that bodies don't have true unity because unity must be indivisible and no body is indivisible. Hence, in his view, there is no true unity—and no true myself—anywhere except in spirits [esprits = 'minds']. But what conclusion do you draw from that? 'That there is nothing substantial in bodies that have no soul or substantial form.' For this conclusion to be validly inferred, we would have to start by defining

'substance' and 'substantial' like this:

I call 'substance' and 'substantial' that which has a true unity.

But this isn't an accepted definition. Any philosopher is equally entitled to use this one instead:

I call 'substance' that which is not a property or state of something else,

and can consequently maintain that it is paradoxical to say that there's nothing substantial in a block of marble, because this block of marble is not a state that some other substance is in. This philosopher could add that the block of marble isn't a single substance but many substances mechanically joined together. 'There's a paradox for you,' he may say, 'asserting that something composed of many substances has "nothing substantial" in it!' He may add that he is even further from understanding your statement that 'if there were only matter and its states, bodies would be merely imaginary and apparent'. For you take the line that if something has no indivisible, indestructible, and ungeneratable soul or substantial form, then there is nothing to it but matter and its states; and you deny that anything except animals has such a substantial form. So you are committed to saying that all the rest of nature is 'merely imaginary and apparent', saying this even more forcefully about all the works of men. [Arnauld is here relying on the time-honoured distinction between 'nature' and—though he doesn't use this word—'art'.]

I can't agree with these last propositions. But I see no drawback to believing that in the whole of corporeal nature there are only machines and aggregates of substances, because none of these parts is strictly speaking a single substance. [At this point in the letter, Leibniz wrote in the margin: 'If there are aggregates of substances there must be true substances that the aggregates are made up of.'] All we get out of that it is something

that it is good to notice—Augustine noticed it—namely •that thinking or spiritual substance is in this way much more excellent than extended or corporeal substance, that only what is spiritual [here = ‘mental’] has a true unity and a true myself, which corporeal things lack. From this it follows that you can’t argue like this:

Matter would have no true unity if it had extension as its essence, therefore extension is not the essence of matter.

That doesn’t follow, because ·it may be that matter doesn’t have true unity; indeed· it may be that not-having-true-unity is of the essence of matter! That is what you yourself say about all the bodies that aren’t joined to a soul or substantial form.

*I don’t know what leads you to think that animals have these souls or substantial forms that are indivisible, indestructible, and incapable of being generated. It’s not that you think you need this in order to explain animal behaviour: you explicitly state [page 48] ‘All bodily phenomena can be explained mechanically—i.e. by the corpuscular philosophy, in terms of certain principles of mechanics taken as premises—without raising the question of whether souls exist’. [Arnauld expresses his next point too briefly. It is this: Looking at how an animal survives and behaves, we can just see that there is something unified about it, something in the nature of a *single* organisation. But Leibniz can’t appeal to that as a reason for attributing substantial forms to animals, because that kind of visible unity is also possessed by plants, and Leibniz doesn’t attribute substantial forms to them. Then:] Now can one see how this opinion can easily survive being combined with the view that these souls ·or substantial forms· are indivisible and indestructible. What can we say happens when a worm is cut into two and each part moves as before? What if a shed housing 100,000*

silkworms catches fire—what will become of these 100,000 indestructible souls? Will they continue to exist separated from all matter, like our souls? What became of the souls of the millions of frogs that Moses killed when he put a stop to that plague? of the countless quail that the Israelites killed in the desert? of all the animals that died in the Flood? And there are yet other difficulties, over how these souls are to be found in every animal when it is conceived. Were they in the seed? Were they indivisible and indestructible there? What happens when the seed is wasted without conception taking place? What happens with animals when the males don’t approach the females during the whole of their lives? [Arnauld puts the last two sentences in Latin, using ‘the obscurity of a learned language’ (Gibbon’s phrase) to veil the sexual nature of the points he is making.]. It’s enough to have given you a glimpse of these problems.

The remaining topic is the unity that the rational soul provides. We agree that it has a true and perfect unity and a true myself, and that it somehow conveys this unity and myself to the whole made up of soul and body that is called ‘man’. This whole isn’t •indestructible, because it perishes when the soul is separated from the body, but it is •indivisible in the sense that we can’t conceive of half a man. But given that our soul doesn’t make our body indestructible, how can it provide it with true unity or indivisibility? United though our body is to our soul, its parts are united to one another only mechanically, so that it isn’t a single bodily substance but an aggregate of many bodily substances. It is as divisible as every other natural body; and divisibility is contrary to true unity; so our body has no true unity. ‘Yes it has,’ you say, ‘through its soul.’ What you are saying is that our body belongs to a soul that is a genuine unity. That isn’t a unity intrinsic to the body; it’s like the ‘unity’ of a number of different provinces that make up only •one

kingdom because they are governed by •one king.

But although genuine unity exists only in thinking things, each of which can say myself, there are different degrees of this improper 'unity' that bodies can have. Every body, considered in itself, is •not one but• many substances; but we can rightly ascribe more unity to **(i)** a body the parts of which work together towards one end (like a house or a watch) than to **(ii)** those whose parts are merely close together, like a heap of stones or a bag of coins; and it's really only **(ii)** that are rightly called 'aggregates per accidens' [see note on page 28]. [Regarding the rest of this paragraph, see note about 'one' on page 47.] Almost all natural bodies that we call 'one'—a gold nugget, a star, a planet—are of kind **(i)**; but by far the best examples of this are organic bodies, i.e. animals and plants, •which qualify as having a high degree of admittedly improper 'unity' without any need to give them souls.... Why can't a horse or an orange tree be considered com-

plete and finished works, as well as a church or a watch? Granted, •they are called 'one' (with the unity that a body can have, which has to be different from the unity that thinking beings can have)—a unity based on the fact that •their parts are mechanically unified with one another, so that •they are machines. Granted—but what of it? They are such wonderful machines that only an omnipotent God could have made them; how could they possibly have any greater perfection than that? Our body, considered alone, is one in this way. Its relation to a thinking being that is joined to it and directs it can add some more unity to it, but not the kind of unity that spiritual things have.

[In the final two short paragraphs Arnauld disqualifies himself from being able to comment the issue in physics between Leibniz and the Cartesians, and makes some friendly personal remarks.]

17. Leibniz to Arnauld, 30.iv.1687 and 1.viii.1687

... I don't think that there is any difficulty in this statement of mine: *The soul expresses more clearly—other things being equal—the states of its body, because it expresses the whole universe from a certain angle, and especially according to how other bodies are related to its own.* (It can't express everything equally well. If it did—and if every soul did—there would be nothing to distinguish one soul from another.) It doesn't follow from this that the soul must have a complete awareness of what is going on in the parts of its body, •and it doesn't have this•. That is because the parts of this body •are

inter-related in different degrees, and •aren't all expressed equally •clearly•. (Any more than external things are: some of them are too far away, others too small or in some other way hard for us to perceive. •According to a famous anecdote•, Thales was looking at the stars when he fell into the ditch that he hadn't seen right in front of him.) The nerves and membranes are more sensible—easier for us to be informed about—than other parts of our bodies, and it may be only through them that we are aware of other parts. The situation seems to be this:

The movements of the nerves or of their associated fluids provide better, less confused, copies of the impressions; and these clearer expressions of the body have their counterpart in the clearer expressions of the soul.

Speaking metaphysically—i.e. strictly—it is *not* the case that the nerves act on the soul, but rather that the soul represents the state of the nerves by a relationship that is spontaneous ·on both sides·. Bear in mind that there are too many happenings in our body for us to perceive them all separately, but they all contribute to our feeling a certain effect to which we become accustomed. We can't sort out its components, because there are too many of them; it is like hearing from a distance breakers crashing on a beach, where we can't pick out the sounds of individual wavelets although each wavelet affects our ears. When a conspicuous change occurs in our body, we notice it quickly and take it in better than we do changes from outside that aren't accompanied by any noteworthy change in our organs.

I don't say that the soul knows of the damage ·to the arm· before it feels pain, except in the sense in which it knows of—i.e. confusedly expresses—*everything*, according to the principles I have established. But this admittedly obscure and confused expression that the soul has of the future is the true cause of •what will happen to it and of the •brighter perception it will have later on when the obscurity lifts—when the darkness brightens—because the future state is a consequence of the earlier one.

I had said that God created the universe in such a way that body and soul, each acting according to its laws, would harmonize in their phenomena [here = 'their transient states and events']. You think that this fits in with the hypothesis of occasional causes. I wouldn't be sorry if it did, because I'm always glad to find allies! But I see your reason: you think

that I won't allow that a body can move itself, ·and you see me as arguing·:

The soul isn't the real cause of the arm's movement;
The body isn't the real cause either; so
The arm must be moved by God.

But that is not my position. I maintain that what is real in the state called 'motion' comes from bodily substance just as much as thought and will come from the mind. Everything that happens in any substance is a result of the first state that God put that substance in when he created it, and in the ordinary course of events all God does for the substance from then on is to keep it in existence in conformity with its preceding state and the changes that it bears. [Leibniz explicitly says that he is excluding 'extraordinary' things that God may do, meaning things that don't accord with any general rule. Miracles? Yes: Leibniz holds that every 'extraordinary' or 'out-of-the-ordinary' event is a miracle; but we'll soon see him saying that there could be 'ordinary' miracles, i.e. ones conforming to some general rule.] But there's nothing wrong with saying that bodies push one another around. That is to say that a body never begins to have •a certain tendency ·to move· unless another body touching it loses a tendency that is proportionate to •it according to the constant laws that we observe in phenomena. . . .

I wouldn't go so far as to assert outright that plants have no soul or life or substantial form. When a cutting from a tree is planted or grafted, the result may be—as you say—a ·new· tree of the same species, but there could be a seminal part ·of the cutting· that already contains a new plant (just as the seed of animals may contain tiny living animals that can be transformed into animals of the same species). So I don't go as far as to assert that only animals are alive and endowed with a substantial form. And perhaps there are infinitely many different degrees in the forms of bodily substances.

You say that those who support the hypothesis of occasional causes, saying that my will is the •occasional cause and God the •real cause of my arm's movement, don't claim that

God does this *in time* through a new act of will that he performs each time I will to raise my arm;

but rather that

God raises my arm through the single act of the eternal will by which he chose to do everything that he foresaw to be necessary for him to do.

To this I answer that the same reason holds for saying that even *miracles* don't occur through a new act of will on God's part, because they are in keeping with his general design, and—as I remarked in earlier letters—every act of God's will contains all the others, though with some order of priority. Indeed, if I understand them aright, the occasionalists introduce a miracle that isn't made less miraculous by being continual; for it seems to me that the notion of *miracle* doesn't consist in *rarity*. I'll be told 'This conduct of God's follows a general rule, so it doesn't involve miracles'; but I don't concede this inference, and I believe that God can adopt general rules in respect even of miracles. Suppose for example that this were the case:

God decides that every time such-and-such occurs, he will bestow his grace immediately (or perform some other action of that kind).

Every action he performs in conformity with such a rule would be a miracle, though an 'ordinary' one. I grant that the occasionalists can define 'miracle' differently, but I don't think they can come up with a definition that will prevail over mine. It seems that as a matter of word-usage a 'miracle' differs from a non-miracle •intrinsically, •through the substance of the act, and not by an external accident of frequent repetition [he means: not through the extrinsic fact that

events like this don't occur often]. Strictly speaking God performs a 'miracle' whenever he does something that exceeds the forces he has given to—and maintains in—created things. For instance, if God caused a stone whirling around in a sling to continue moving in a circle after being released from the sling. . . . that would be a miracle, because according to the laws of nature the stone should continue along a straight line at a tangent to its circular path; and if God decreed that this should always happen, he would be performing *natural miracles*—there would be no simpler explanation for this movement. . . .

Returning now to our main theme, I want to be as clear as I can about where I stand. I believe that the actions of minds change *nothing* in the nature of bodies, nor do bodies cause *any* changes in the nature of minds; and it is not true, even, that God changes bodies (minds) on the 'occasion' of changes in minds (bodies)—except when he performs a miracle. In my opinion things are so prearranged that a mind never effectively wills •something except when the body is prepared to do •that thing by virtue of its own laws and forces; whereas the occasionalists say that God, on the 'occasion' of an event in the mind (body) changes the laws regarding bodies (minds)—that's the essential difference in our views. So I don't think we have to worry over how the soul can give movement or change of speed or direction to the animal spirits [see note on page 40], because it *doesn't*. [Leibniz now presents a very abstract reason why a mind can't affect a body. Its premise is that 'mind and body are incommensurable', meaning that there are no descriptions or measures that can be applied equally to minds and to bodies. Because of this, Leibniz says, there can't be a truth of the form

whenever a mind undergoes a change of kind K_m , that causes in its body a change of kind K_b ,

where K_m and K_b are inter-related in such a way that it just *makes sense* that they would be causally connected like that. Leibniz is sure that real causal relations make sense—are in some way necessary. He adds that this creates a further difficulty for occasionalism also, because there can't be a truth of the form

whenever a mind undergoes a change of kind K_m that is the occasion for God to cause in its body a change of kind K_b ,

where K_m and K_b are inter-related in such a way that it would *make sense* for God to use one as a trigger for the other. (All of this is supposed to hold equally for causes or occasions going in the opposite direction, from body to mind.) Descartes seems to have been an occasionalist (Leibniz says) who held that a mind can alter not the speed but the *direction* of movements in the associated body; he held that this doesn't conflict with any of the laws of physics. Leibniz replies **(1)** that this is still open to the above argument about 'making sense'. Also **(2)** Descartes is wrong, anyway, about the laws of physics, which govern directions as well as speeds. If God did what Descartes credits him with doing, 'it would be a miracle'. Leibniz continues:]

It is therefore infinitely more reasonable and worthy of God to suppose •that he first created the machine of the world in such a way that

—without constantly violating the two great laws of nature, the law of force and the law of direction; indeed, following them perfectly, except for miracles—the springs of bodies are ready to kick themselves into action as required, at the moment when the soul has a suitable act of will or thought that comes to it only in conformity with the preceding states of the body; and •that thus the union of the soul with the bodily machine and its parts, and the action of one on the other, consist only in the concomitance

•or going-together or harmony• that testifies to the admirable wisdom of the creator much better than any other hypothesis. [Notice: Leibniz says that the mind acts 'in conformity with' the body's previous state; this is the language of harmony, not of causation.] It has to be admitted that this hypothesis is at least •possible, and that God is a great enough workman to be able to carry it out; and once that has been admitted, it is easy to conclude that this hypothesis is the most •probable because it is the simplest and the most intelligible, and at once demolishes all the problems •about mind-body relations•. Not to mention the problem posed by the criminal actions •of men•, in which God's only role—it seems reasonable to think—is to keep created forces in action.

Here's a comparison •that will help me to explain my position•. The correspondence •between body and soul• that I uphold is comparable with this:

Two choirs are performing their parts separately, unable to see or even hear each other, but harmonizing perfectly—*wonderfully*—because each singer follows his own written score. •Let us call the choirs One and Two• . . .

Someone who is standing in the middle of choir One might be able to judge from it what the choir Two is doing. He could even get into the habit of doing this. If things were so arranged that this person could hear choir One without seeing it, and could see choir Two without hearing it, with his imagination making good the deficiency, he might come to focus his thoughts not on One but on Two. He might think of One—the choir he is *in*—as merely an echo of Two. [Leibniz goes on to suggest situations where the person might give more of a role to One; this obscure passage seems to be omittable without serious loss. He then continues:] However, I don't object to minds' being called 'occasional causes' of certain bodily movements, or even their 'real causes' in a

way. Think about this in terms of divine decisions. What God foresaw and preordained for minds was an occasion for his regulating bodies from the outset in such a way that they would work together ·with minds·, according to the laws and forces that he would give to each; and as the state of one is an •unfailing consequence of ·the state of· the other—often a •contingent and even a •free consequence, but still *unfailing*—we can say that God arranges a *real connection* by virtue of the general notion of substances that implies that they all express one another perfectly; but ·although this connection is •real·, it isn't •immediate, being based only on what God did in creating the substances. [The puzzling phrase 'general notion of substances' is faithful to Leibniz's French, not an artifact of this version.]

If my view that •substance requires a •true unity were based only on a definition that I thought up contrary to common usage, all we would have here is a quibble over words (if it weren't for the fact that my definition served to call attention to a notion that most people had wrongly overlooked). But the common run of philosophers [here = 'the scholastics'] have taken this term in pretty much the same way, distinguishing

- intrinsic unity from •accidental unity [= 'unity through circumstances']
- substantial form from •accidental form,
- perfect substances from •imperfect substances,
- natural substances from •artificial substances

[Leibniz gives all these in scholastic Latin]. More important than that, I walk out on ·these technical· terms and consider matters in a much more abstract way: I believe that where there are only entities through aggregation there won't be any real entities at all; •each entity through aggregation presupposes entities that have true unity, because •it gets its reality purely from the reality of its parts, so that it won't have any

reality if each part is also an entity through aggregation. . . . I agree with you that in the whole of corporeal nature there are only machines (which are often animated), but I don't agree that 'there are only aggregates of substances'—if there are aggregates of substances then there *must* be genuine substances for the aggregates to be aggregates *of*. So we *have to* take one or other of these ways out:

- Appeal to mathematical points, from which certain authors make up extension.
- Appeal to the atoms of Epicurus and Cordemoy (which you dismiss, as I do).
- Admit that no reality is to be found in bodies.
- Recognize certain bodily substances that have a true unity.

I said in an earlier letter that the composite of this diamond and that one can be called 'a pair of diamonds' [indistinguishable in French from 'one pair of diamonds']; but this is merely an entity of **(a)** reason; and even if the diamonds are brought close to one another the pair of them will be ·only· an entity of **(b)** imagination or perception, i.e. a phenomenon. Physical closeness, moving together, working together for a single end—none of this makes any difference to substantial unity. To be sure, it can be all right to talk as though a number things constituted a single thing—more or less all right depending on how tightly connected the things are; but that ·way of talking· is useful only for condensing our thoughts and representing phenomena.

It seems too that what constitutes the essence of an entity through aggregation *is* only a state of being of its constituent entities; for example, what constitutes the essence of an army is only a state of being of the constituent men—·for an army to exist is for a number of men to be interrelated thus and so·. [Leibniz is saying here that his position is still firm even if he accepts the second of the two definitions of 'substance' that Arnauld gave

on page 53.] Such a state of being presupposes a substance whose essence is *not* a state of being of another substance. Thus, every machine presupposes some substance in its constituent cogs and wheels; there is no multiplicity without true unities.

To be brief, I accept as axiomatic an identical proposition that ·is saved from outright triviality only by· a variation in emphasis:

Something that isn't truly *one* entity isn't truly an *entity* either.

[In Leibniz's French, 'one entity' and 'an entity' are both expressed by *un estre*.] It has always been thought that 'one' and 'entity' are interchangeable. Entity is one thing, entities another; but the plural presupposes the singular, and where there is no entity, still less will there be many entities. How could I make it clearer than that? That is why I thought I was entitled to differentiate entities through aggregation from substances, because the unity of these entities exists only in our mind, which bases itself on the relations or states of genuine substances. If a machine is a substance, a circle of men holding hands will be too, and then an army, and finally every multiplicity of substances.

I don't say that if an item lacks true unity then there is nothing substantial in it, nothing but appearance; for I concede that it will have as much reality or substantiality as there is true unity in whatever makes it up.

You object that lacking-true-unity may be of the *essence* of matter; if that is right, then it will be of the essence of matter to be a phenomenon, stripped of all reality like a coherent dream; for phenomena themselves—a rainbow, a heap of stones—would be wholly imaginary if they weren't composed of entities having unity.

You say that you don't see what leads me to admit these substantial forms, or rather these bodily substances

that have true unity. What leads me is the fact that I can't conceive of any reality without true unity. And to my way of thinking the notion of •individual substance has consequences that are incompatible with ·the notion of· •entity through aggregation. I conceive of substance as having properties that can't be explained in terms of extension, shape and motion; ·and there are two other features of bare material bodies that don't square with their being substances·. (i) Because the continuum is ·not merely divisible but· *divided* to infinity, bodies have no exact, fixed shape. (ii) Motion—considered merely as a thing's changing its surroundings, i.e. merely in terms of extension—involves something imaginary; so when a number of things are involved in such changes there is no ·objective· way to decide which of them is really moving. Or, rather, the only objective way to do this is in terms of *force* that is the cause of the motion—and force exists in bodily substance! Certainly, there's no need to mention these substances and qualities in explaining particular phenomena; but ·in that respect they are in good company, because in giving those explanations· there's no need either to study God's role in the world, the composition of the continuum, the plenum, or a thousand other things. The particular facts of nature can be explained mechanically, but only after we have discovered—or assumed—the principles of mechanics itself; and these can't be established *a priori* except through metaphysical arguments. Even the problems about the composition of the continuum will never be solved so long as •extension is thought to constitute the substance of bodies, and •we are entangled in our own fantasies.

I think too that to confine genuine unity or substance almost entirely to *man* is to be limited in metaphysics in a way comparable with the limitation in physics of those who enclosed the world in a ball. And since each genuine

substance is an expression of the whole universe from a certain angle, and ·is therefore· a duplication of the works of God, it is in keeping with the greatness and beauty of God's works (since these substances don't get in one another's way) for him to make, in this universe, as many as possible and as higher reasons allow.

Try to base everything on sheer *extension* and you'll destroy the whole of this wonderful variety. *Mass* alone—i.e. stuff that has nothing to it but its sheer occupancy of space—(if such a thing could be conceived) is as much inferior to a perceiving substance that represents the whole universe. . . .as a corpse is inferior to an animal or rather as a machine is inferior to a man. This is how signs of the future are formed in advance and how traces of the past are preserved for ever in each thing. It is also how cause and effect adapt to one another precisely, right down to the finest details, although every effect depends on an infinity of causes and every cause has an infinity of effects. This couldn't possibly happen if the essence of matter consisted of a certain shape, movement, or other definite state of extension. And in nature there is none of that: where extension is concerned, everything is strictly indefinite [*indefini à la rigueur*—perhaps said slightly jokingly], and when we attribute extension to bodies we are talking about mere phenomena and abstractions. This shows how greatly mistaken people are in these matters when they don't *think* about them hard enough to recognize true principles and to form an accurate idea of the universe.

And it seems to me that refusing to go along with this very reasonable idea is as prejudiced as refusing to recognize the •greatness of the world, the •infinite division ·of matter·, or •mechanical explanations of nature. To think of extension as a basic notion, leaving out the true notions of substance and of action, is as big a mistake as it was in earlier days to settle for substantial forms in general, without looking into

the details of the workings of shape, size, velocity etc.

The multiplicity of souls shouldn't bother us any more than the multiplicity of the Gassendists' atoms, which are as indestructible as souls are (and I'm not saying that all these souls experience pleasure or pain). It is in fact a perfection of nature to have many souls, because a soul or an animate substance is infinitely more perfect than an atom, which has no separate parts and no internal variety, whereas each animate thing contains a world of diversities within a genuine unity. Now, experience favours this multiplicity of animate things. We find that there are enormously many animals in a drop of peppered water [such as Leeuwenhoek used in his observations of protozoa and bacteria]—we can kill millions of them in an instant. . . . Now, if these animals have souls, we must say of their souls what we can probably say of the animals themselves, namely that they have been alive since the creation of the world and will be alive until its end, and that

just as generation seems to be only a change consisting in •growth, death will only be a change consisting in •diminution, sending the animal back into the recesses of a world of tiny creatures where it has more limited perceptions, until perhaps the order [= God's over-all scheme for the universe] calls it back on stage.

The ancients were mistaken in introducing the transmigrations of souls ·from animal to animal· instead of the transformations of one and the same animal always keeping the same soul. . . . But minds are not subject to these revolutions. God creates each of them when the time for it arrives, and detaches it from the body (at least from its coarse body) by death, because they must always keep their moral qualities and their ability to remember, so as to be perpetual citizens of this entirely perfect and universal commonwealth of which God is the monarch, which cannot lose any of its

members and whose laws are superior to the laws of bodies.

I accept that the body on its own, without the soul, has only a unity of aggregation; it still retains some reality remaining even then, coming from its constituent parts that retain *their* substantial unity because of the countless living bodies that are included in them. But although a soul may have a body made up of parts that are animated by separate souls, that doesn't mean that the soul or form of the whole is made up of the souls or forms of the parts. As regards a worm that is cut in two: even if each part retains some movement, it doesn't have to be the case that they are both animate. [Leibniz says *insecte*, but this is clearly reference back to the *worm* introduced by Arnauld on page 54.] At least the soul of the whole worm will remain only in one part; and just as in the formation and growth of the worm the soul was there from the beginning in a part that was alive then, so after the destruction of the worm its soul will remain in a part that is still alive—a part small enough to be sheltered from whatever tears or scatters the body of this insect. For this purpose, smallness will do the job. There is no need to conjure up, as the Jews do, a little bone of irreducible hardness for the soul to take refuge in. I agree that there are degrees of accidental unity: an ordered society has more unity than a disorderly mob; an organic body or a machine has more unity than a society. For *x* to 'have more unity' than *y* is for it to be more appropriate to conceive of *x* as a single thing than to think of *y* in that way, because *x*'s constituents are more richly inter-related; but ultimately all these unities are made complete only by thoughts and appearances, like colours and other phenomena that we nevertheless call 'real'. The tangibility of a heap of stones or a block of marble doesn't prove its substantial reality, any more than the visibility of a rainbow proves *its* substantial reality. Don't be over-impressed by tangibility. Everything, however solid, has *some* degree of fluidity; this marble block

may be merely a heap of countless living bodies or like a lake full of fish, though these animals are ordinarily visible only in half-rotten bodies.

So it can be said of these composite bodies and their like what Democritus rightly said about them: 'They exist by opinion, by law, by convention.' And Plato holds the same view about everything that is purely material. Our mind notices or conceives of certain genuine substances that have various modes [= 'states']; these modes include relations with other substances; and from this the mind takes the opportunity—for convenience in reasoning—to link these substances together in thought and bring them under one name. But we mustn't let ourselves be deceived into regarding them as substances or truly real entities. *That* blunder is reserved for those who stop at appearances, or—worse still—those who make realities out of all the abstractions of the mind, thinking of number, time, place, movement, shape as free-standing entities. I go a different way: I maintain that there's no better way to put philosophy back on its feet and turn it into something precise than by focusing on individual substances or complete entities that have genuine unity, their changes all being caused from within themselves; everything else is merely phenomena, abstractions or relationships.

We'll never find any rule or recipe for making a genuine substance out of many entities by aggregation. You might think:

Something whose parts work together towards a single end is a better candidate for the role of *genuine substance* than is something whose parts are merely continuous.

But by that standard the totality of the officers of the Dutch East Indies Company—scattered across Europe and Asia—form a real substance much better than does a heap

of stones. But what is this ‘single end’? It is a mere likeness between the actions of one of the parts and the actions of another substance, or else it is a pattern of active and passive relationships that our mind picks out. If you prefer the unity of contiguity as a basis for something to be a genuine substance, you’ll run into other difficulties. It may be that solid bodies have their parts joined only by the pressure of the surrounding bodies and of themselves, and in their substance they don’t have any more unity than a heap of sand: sand without lime! Why will many rings, interwoven to make a chain, be more likely to make up a genuine substance than if they had openings to allow them to separate one from another? It could be that not a single link in the chain touches any other link, and even that no link is caught by another link, and yet it may be that a certain small trick is needed to separate them. [Leibniz supplies a sketch.] What are we to say in this case? That the chain’s substantiality is suspended, as it were, pending the arrival of someone who has the skill and the desire to pull the links apart? Fictions of the mind, everywhere you look! We’ll have nowhere to *stand*, no basis for real, solid principles, if we don’t if we don’t distinguish what is truly a complete entity, a substance.

And a final point: One shouldn’t assert anything for which one has no basis. So it is up to those who make entities and substances without genuine unity to •prove that there’s more reality in them than I have allowed, and to •show what it consists in. I am waiting! I’m waiting for a substance-notion or entity-notion that can be made to fit all these things that I have disqualified. And who knows what *else* it may be made to fit? Perhaps some day parhelia—and maybe also dreams—will squeeze in under it. That’s what will happen unless very precise limits are set to this right of citizenship that some people want to assign to entities formed by aggregation. [Parhelia are bright patches appearing in

the sky on each side of the setting sun when it is viewed through air containing many ice crystals. They are the theme of one of the most beautiful songs ever written, Schubert’s *Die Nebensonnen*.]

I have gone on at length about these topics so that you can judge not only my views but also my reasons for them. . . . I keep for another occasion some other topics that you touched on in your letter.

* * * * *

[Then about three months later Leibniz wrote Arnauld a short letter on personal topics, including this philosophical bit:] The Reverend Father Malebranche replied recently to my objection in the *Nouvelles de la Republique des Lettres*. He seems to admit that some of the laws of nature or rules of movement that he had put forward may be hard to defend. But he thinks that’s because he based them on infinite hardness, which doesn’t exist in nature; whereas I think that his rules would be indefensible even if nature did contain infinitely hard things. It is a weakness in his and Descartes’s arguments that they overlooked this: everything that is said about •motion, •inequality, and •elasticity must still hold good for the cases where these things are infinitely small and where they are infinite. Infinitely small motion becomes •rest, infinitely small inequality becomes •equality; and infinitely rapid elasticity is nothing but •extreme hardness. This is like what happens in geometry when all the proofs concerning the ellipse hold equally for the parabola when this is thought of as an ellipse whose other focal point is infinitely distant. It is strange to see that most of Descartes’s rules of movement flout this principle, which I consider to be as infallible in physics as in geometry, because the author of the world acts as a perfect geometer. If I answer Malebranche, it will be mainly in order to highlight this principle, which is very useful and has, so far as I know, scarcely yet been considered in its generality.

18. Arnauld to Leibniz, 28.viii.1687

To start with, I must apologize for replying so late to your letter of 30th April. Since then I have had various illnesses and tasks; also, I have a little trouble in setting my mind to such abstract matters. So please forgive the brevity of what I shall say in response to the new points in your last letter.

(A) I have no clear notion of what you mean by ‘express’ when you say that ‘the soul expresses more clearly—other things being equal—the states of its body, because it expresses the whole universe, even, from a certain angle’ [page 55; Arnauld has added the word ‘even’ to what Leibniz wrote]. If you mean ‘expression’ to involve some thought or item of knowledge, I can’t agree that my soul has more thought and knowledge of the movement of lymph in my body than it has of the movement of Saturn’s satellites; and if it doesn’t involve thought or knowledge then I don’t know what ‘expression’ is. So that doesn’t help to solve the problem that I had put to you: how can my soul give itself a feeling of pain when I am stabbed during my sleep? To do that it would have to know that I have been stabbed, whereas *in fact* it has this knowledge only through the pain it feels.

(B) Let us consider following argument in the philosophy of occasional causes: ‘My hand moves as soon as I will it to do so. Now,

The soul isn’t the real cause of the arm’s movement;
The body isn’t the real cause either; so
The arm must be moved by God.’

You say that this assumes that a body cannot move itself, whereas you think that it can. According to you, what is real in the state called motion comes from bodily substance just as much as thought and will come from the mind. But I find it very hard to see how a body that has no movement

can give itself movement. And if that can happen, one of the proofs of God—the argument from the necessity of a first mover—collapses.

Anyway, even if a body could make itself move, that wouldn’t enable my hand to move whenever I willed it to. How could my hand know when I wanted it to move? My hand doesn’t know anything!

(C) I come now to these indivisible and indestructible substantial forms which you think must be agreed to exist in all animals and perhaps even in plants; your reason being that otherwise *anything composed of* matter (which you hold is not made up of atoms or of mathematical points, but is infinitely divisible) would not be intrinsically unified but would *at best* be accidentally unified *like a heap of stones*. I have more to say about this *than about the first two topics*.

(1) I replied that it is may be essential for matter, the most imperfect of all entities, to have no true and proper unity, so that any portion of matter must always be many entities, never properly one entity. This, which is what Augustine believed, is no more incomprehensible than the infinite divisibility of matter, which you accept.

You reply that that’s impossible because there can’t be many entities where there isn’t one entity. This is an argument that *the atomist* Cordemoy might have endorsed; but you are bound to reject it, because in your view of things nearly every body is a case of ‘many entities’ and not properly ‘one entity’. The only exceptions you allow to this are bodies that you think have no substantial forms—animate bodies, which don’t constitute one hundred-millionth of all the bodies there are. So it isn’t after all impossible for many

entities to exist where there is properly not one entity.

(2) I don't see how your substantial forms can cope with this problem. ·That is, I don't see how your substantial forms can confer genuine unity on anything·. For something to be one in your metaphysically rigorous way, the attribute that gives it this unity, ·this one-ness·, must be •essential to it and •intrinsic to it. So if a portion of matter *x* ·considered on its own· is not one entity but many entities, I can't see how a substantial form can give *x* unity, making it not many but one. The point is that the substantial form is really distinct from *x*, so that its being conferred on *x* is just giving *x* an external-relational property ·like the property of having-a-crown-on-your-head·; this isn't intrinsic to *x*, so it can't turn *x* into a single entity. I do see that it may be a reason for us to call *x* 'one entity', if we aren't using 'one' in this metaphysically strict sense ·of yours·. But we don't need these substantial forms for that; there are countless inanimate bodies—ones with no substantial form—that can be called 'one' in a legitimate though unstrict sense. Isn't it good usage to say that the sun is one, that the earth we live on is one, and so on? So: I can't see that there is any need to admit these substantial forms so as to give true unity to bodies that otherwise wouldn't have it.

(3) You admit these substantial forms only in animate bodies. Now, every animate body is organic, and every organic body is many entities. So, far from your substantial forms preventing the bodies to which they are joined from being many entities, any such body must be many entities if a substantial form is to be joined to it.

(4) I have no clear notion of these substantial forms or souls of animals. You must look on them as substances: you call them 'substantial', and say that only substances are genuinely real entities, amongst which you give these substantial forms pride of place. Now, I am acquainted

with only two kinds of substances, bodies and minds; the onus is on those who claim that there are others to prove it to us, according to the maxim with which you conclude this letter: 'One shouldn't be confident of anything for which one has no basis' [page 64]. Let us suppose, then, that these substantial forms are bodies or minds. •If they are bodies they must have extension and consequently be divisible—infinately divisible—from which it follows that they are not one entity but many entities [he means that each of them is not one entity but many entities]. In that case the substantial form of a given body will be as plural as the body itself, which disqualifies it from being able to confer true unity on it. •If substantial forms are minds, their essence will be to think: for that is how I understand the word 'mind'. An oyster thinks? A worm thinks? And your declared uncertainty about whether plants have soul and life and substantial form should make you uncertain about whether they think. . . .

(5) The indestructibility of these substantial forms or souls of animals seems to me even more indefensible. I had asked you what became of these animals souls when they die or are killed; when for instance one burns caterpillars, what became of their souls. You reply: 'The soul of the whole caterpillar will remain only in one part—a part small enough to be sheltered from whatever tears or scatters the body of this insect' [page 63]. And that leads you to say that 'The ancients were mistaken in introducing the transmigrations of souls ·from animal to animal· instead of the transformations of one and the same animal always keeping the same soul' [page 61]. Nothing more subtle could be imagined for solving this problem! But consider carefully what I'm going to say to you. When a silkworm butterfly lays its eggs, each of those eggs (you say) has a silkworm soul, from which it comes about that five or six months later little silkworms

emerge from the eggs. Now, if a hundred silkworms had been burned, there would also be, according to you, a hundred silkworm souls in that many small particles of these ashes. But **(a)** I wonder whom you'll be able to persuade that each silkworm, after being burned, has remained the same animal keeping the same soul attached to a small particle of ash that was formerly a small part of its body! And **(b)** if this is how things stand, why are silkworms not born from ash particles as they are born from eggs?

(6) But this problem seems greater in animals that are known with more certainty to be born always from the union of the two sexes. I ask, for instance, what became of the soul of the ram that Abraham sacrificed instead of Isaac and subsequently burned. You won't say that it passed into the foetus of another ram, for that would be the Ancients' idea of a soul passing from body to body, which you reject. Your answer will be that it remained in a particle of the body of that ram which was reduced to ashes, and that the sacrifice was therefore only 'the transformation of the

same animal, keeping always the same soul'. That has some plausibility when it is a part of your account of the substantial form of a caterpillar that becomes a butterfly, because the caterpillar and the butterfly are both organic bodies, so that the butterfly can be considered to be the same animal as the caterpillar, because it keeps many of the caterpillar's parts unaltered, while the other parts have changed merely in form. But apply this account to the ram that is burned and you get the ram's soul withdrawing into a part of the incinerated ram that isn't organic and can't be thought to be an animal, so that attaching the ram's soul to it won't make an animal, still less a ram, as the soul of a ram should. So what will happen to the soul of this ram in this ash? It can't take itself out of the ash and go elsewhere, because that would be a soul-transfer, which you reject. And it is the same for an infinity of other souls that wouldn't form animals because they would be attached to inorganic portions of matter that one can't imagine becoming or being animals according to the laws established in nature. . . .

19. An interlude concerning Leibniz's salvation, vii-ix.1687

A. [Arnauld sent the preceding letter via the Count, to whom he said in a covering letter:] *Leibniz has very curious opinions about physics that seem to me scarcely defensible. But I have tried to tell him my thoughts on the subject in a way that won't wound him. It would be better if he gave up, at least for a time, this sort of speculation, and applied himself to the greatest business he can have, the choice of the true religion, in accordance with what he wrote about it to you*

some years ago. It is very much to be feared that death will catch him unprepared unless he has taken a decision that is of such importance for his salvation.

B. [Passing that on to Leibniz, the Count weighed in on his own account:] He is quite right to say that, for even if there were thousands amongst the Protestants who don't know left from right, who can in comparison with scholars be thought no better than animals, and who only adhere

to heresy because they don't know what it is, that certainly can't be said of you, who are so learned and on whom I have exerted every possible effort to bring you out of the schism. . . . To take just one point out of a thousand, do you really believe that Christ established his Church in such a way that what one thinks is white the other thinks black, and that he constructed the Church's ministry in such a contradictory way that we and the Protestants are at odds and hold different beliefs? [That challenge is presumably aimed at Leibniz's life-long project of *reconciling* Roman Catholicism with Protestantism, making a choice unnecessary]. . . . Oh, my dear M. Leibniz, do not lose the time of grace in this way, and 'if today you have heard the voice of the Lord, harden not your heart' [the Count puts this in Latin, quoting from Paul's letter to the Hebrews]. Christ and Belial don't agree with one another any more than Catholics and Protestants do, and I have no hope for your salvation if you don't become a Catholic.

C. [Leibniz drafted—though he did not send—this reply to the Count:] On the subject of religion (since you touch that chord), there are people whom I know (I'm not speaking about myself) •who aren't far removed from the views of the Roman Catholic Church, •who find the definitions of the Council of Trent quite reasonable and in keeping with Holy Scripture and the Holy Fathers, •who consider the system of Roman theology more coherent than that of the Protestants, and •who admit that dogma wouldn't hold them back ·from becoming Catholics·; but they are held back by two other things. **(1)** There are by certain very great and all too common abuses of practice that they see to be tolerated in the Roman Catholic communion, especially in matters of worship. They

- are afraid of being obliged to approve these abuses or at least of being in a position where they dare not criticize them; they
- are afraid of thereby shocking people who would regard them as having no conscience, and of leading

others into impiety through their example . . . they •even doubt whether one can live in communion with people who carry on certain intolerable practices; and they consider that in these circumstances it is more excusable to remain in a Church than to enter one. **(2)** Even if that obstacle didn't exist, they find themselves held back by the anathematizations—the solemnly pronounced curses—of the ·Roman Catholic· Council of Trent. They can't bring themselves to endorse these condemnations, which strike them as excessively rigid and unnecessary; they think that doing so is not in the spirit of charity and creates or fosters a schism. Yet these people believe themselves genuinely Catholic, like those who have been unjustly excommunicated because of some factual error by the Church; for they uphold the dogmas of the Catholic Church, and they want the external communion—the participation in the Church's sacraments and ceremonies—that others impede or refuse them.

A famous Roman Catholic theologian had a great deal of support in his suggestion of a certain expedient. He believed that a Protestant

- who is held back from Roman Catholicism only by the anathematizations and even by some of the definitions of the Council of Trent, •who doubts whether this Council truly spoke for the whole Church, but •who is ready to submit to a council that truly does, and •who consequently accepts the first principles of the Catholic Church so completely that his error ·in not being a Roman Catholic· is not an error of principle but only one of fact,

might be received into the faith without any mention being made of the Council of Trent. [Leibniz—or his 'famous theologian'—supports this with remarks about the questionable status of the Council of Trent. He then sums up:] But one doubts whether this expedient will be approved.

20. Leibniz to Arnauld, 19.x.1687

As I will always set great store by your judgment on anything about which you have been able to inform yourself, I want to make an effort here to bring it about that the points of view that I consider important and almost beyond doubt appear to you as (if not certain, then) at least defensible. For it doesn't seem to me hard to answer your remaining doubts. You still have them, I think, only because a person who has prior opinions of his own and also has a lot on his mind, however able he may be, initially has great trouble understanding a new idea on a topic that is abstracted from the senses, where we can't get help from figures, models or mental pictures.

I had said that since the soul expresses naturally the whole universe from a certain angle and according to how other bodies relate to its own body; so it expresses more immediately what pertains to the parts of its body; and so it must, through the laws of the relationship that are essential to it, express in a particular way certain extraordinary movements of the parts of its body—and that is what happens when the soul feels pain from the body. In reply to this you say that

You have no vivid idea of what I mean by the word 'express'; if by that I mean a *thought*, you don't agree that the soul has more thought and knowledge of the movement of lymph in the body than of Saturn's satellites; but if I mean something else, you say you don't know what it is; and therefore the word 'express', if I can't explain it clearly, won't contribute to any account of how the soul can give itself the feeling of pain. To do this appropriately, the soul would have to know already that I am being jabbed, whereas in fact it knows this only *through* the pain it feels!

I shall respond to this by explaining this term that you judge to be obscure, and will apply the explanation to the objection you have raised.

One thing expresses another (in my terminology) when there is a constant and rule-governed relationship between what can be said of one and what can be said of the other. That is how a perspectival projection 'expresses' its ground-plan. Any kind of thing can 'express' other things; expression is a genus of which **(a)** natural perception, **(b)** animal sensation and **(c)** intellectual knowledge are species. All that is needed for **(a)** natural perception or **(b)** sensation is that something divisible and material and scattered through many entities is expressed or represented in a single indivisible entity, i.e. in a substance that is endowed with genuine unity; and when this representation is accompanied by consciousness in the rational soul it is called **(c)** 'thought'.

Now, this expression occurs *everywhere*, because *every* substance is in harmony with *every* other, and undergoes some proportionate change corresponding to the smallest change anywhere in the whole universe, although this change is more or less noticeable in proportion as other bodies or their actions have more or less relation to ours. I believe that Descartes himself would have agreed with this, because he would surely hold that—because of the continuity and divisibility of all matter—even the smallest movement affects neighbouring bodies, and so the effect is passed on from neighbour to neighbour, to infinity, decreasing as it goes. So our body must be affected somehow by every change in everything else. Now, to all the movements of our body there correspond certain more or less confused perceptions or thoughts of our soul; so the soul too will have

some thought about all the movements in the universe; and in my view every other soul or substance will have some perception or expression of them. True, we aren't clearly aware of all the movements of our body, e.g. the movements of lymph.

But, to return to an old example of mine, it is like my having to have *some* perception of each wavelet on the shore if I am to be aware of their joint effect, namely the crashing noise of the surf. So we do feel some confused result of all the movements occurring in us, but because we're accustomed to this movement within us we aren't clearly and reflectively aware of it—except when there is a considerable alteration in it, as at the start of illnesses. (It would be good if physicians applied themselves to identifying more accurately these kinds of confused feelings that we have of our bodies.) Now, since we are aware of other bodies only through their relations to ours, I was right to say that the soul expresses better what pertains to our body. We know of the satellites of Saturn or Jupiter only through movements that occur in our eyes.

I think that a Cartesian will agree with me about all this (except that •I suppose that we are surrounded by non-human souls to which I ascribe an expression or perception inferior to thought, whereas •Cartesians deny that non-human animals feel anything and don't allow any substantial forms other than human ones; but that has nothing to do with our present question about the cause of pain). Our present concern, then, is to know how the soul becomes aware of the movements of its body, given that we can't see any way of explaining how—along what causal channels—the action of an extended mass might be passed along to an indivisible entity. The ordinary Cartesians admit that they cannot account for this union; the authors of the hypothesis of occasional causes think that it is 'a difficulty worthy of a liberator, where God has to come to the rescue' [Leibniz writes

this in Latin, adapting something by the Latin poet Horace]. As for me, I explain it in a natural manner through the general notion of *substance* or *complete entity*. This notion implies that a substance's state at each moment is a natural consequence of its preceding state, from which follows that the nature of every individual substance—and thus of every soul—is to express the universe. Each soul was initially created to be such that by virtue of the inherent laws of its own nature it must turn out to be in harmony with what is happening in bodies, especially its own; so there's no surprise in its feeling pain when its body is damaged.

[Leibniz now says it all again, trying very hard to be clear, summing up thus:] As one ·bodily· movement follows from another, likewise one ·mental· representation follows from another in a substance whose nature it is to be representative. Thus the soul *must* be aware of the bodily damage when the laws of the relationship require it to express more clearly a more noticeable change in the parts of its body. It's true that the soul isn't always clearly aware of the causes of the bodily damage and of its future pain, when these are still hidden in its over-all representative state—e.g. when we are asleep or fail for some other reason to see the dagger approaching—but that's because the movements of the dagger are making too small an impression at that time. We are already affected in a way by all these movements ·in our body· and representations in our soul; so we have within us

- the representation or expression of the causes of the bodily damage,

and consequently

- the cause of the representation of that damage, i.e. the cause of the pain;

but we can't sort them out from among so many other thoughts and movements, except when they become con-

siderable. Our soul reflects only on unusual phenomena that stand out from the rest; it can't have a separate thought about *any* when it is thinking equally about *all*.

After all that, I can't guess where the faintest shadow of difficulty can be found, unless someone denies that God *could* create substances that are initially built in such a way that their individual life-histories—each caused purely by the nature of that one substance—harmonize with one another. That denial is utterly implausible. We have experience of mathematicians representing the movements of the heavens in a machine; [Leibniz quotes a Latin epigram celebrating this achievement of 'the old man of Syracuse', Archimedes; then:] and we can do this much better today than Archimedes could in his time. Well, God infinitely surpasses human mathematicians, so why couldn't he create *representing* substances in such a way that the natural changes in their thoughts or representations, arising through their own laws, will correspond to everything that is going to happen to every body? This seems to me easy to conceive, and also worthy of God and of the beauty of the universe. And also in a way *necessary*, because all substances *have to* have a harmony and linkage with one another, and *have to* express individually •the same universe and •the cause of everything (i.e. the will of their creator) and •the decrees or laws that he has established to make them adapt to one another as well as possible.

So this mutual relationship of different substances—that can't strictly speaking *interact* with one another, but which harmonize as though they were interacting—is one of the strongest proofs of God's existence or of a common cause that every effect must always express according to its point of view and its capacity. Otherwise the transient states of different minds wouldn't harmonize with one another, and there would be as many systems as substances; if

they did sometimes harmonize it would be through sheer chance. Our whole notion of time and space is based on this harmony, . . . ,but I must stop this. If I explained in full detail everything related to our topic, I would never finish! However, I have preferred writing at length to under-explaining myself.

Passing now to your other doubts, I think now that you will see what I mean when I say that a bodily substance gives itself its own movement at each moment (or, rather, gives itself *what is real* in the movement; movement that is *a phenomenon* requires other phenomena, ·i.e. phenomena of other substances·). It is because the state of a substance at each moment is a consequence of its preceding state. It's true that a body without movement—or, rather, without any action or tendency to change—can't give itself any movement; but I maintain that there is no such body. Strictly speaking, bodies don't push one another when they collide; in a collision a body engages its own movement, or its own elasticity (which is just a movement of its parts). Every bodily mass, large or small, *already has* all the force it will ever acquire. All that it gets from a collision with other bodies is their determination, or rather that determination comes to it only at the moment of the collision. [In this context, 'determination' refers to speed and direction.]

·I said a few lines back that 'there is no such body'·. You will say that God can reduce a body to a state of perfect rest, but I reply that God can also reduce it to nothing! This body without active or passive qualities is far from being substance. Anyway, all I need ·for my immediate purposes· is to declare that if God ever does (miraculously, of course) reduce some body to perfect rest, it will take another miracle to restore some movement to it! You can see too that my opinion •confirms the proof of the prime mover, rather than •harming it. We have to account for how motion first got started, and for its laws and the harmony amongst

movements; and we can't do that without bringing in God. Why does my hand move? Not because I will it to! I could will a *mountain* to move, but unless I have a miraculous faith nothing will come of that. My hand moves because the elasticity in it slackens in the right way to achieve this result; I couldn't have successfully willed my hand to go up if I hadn't chosen that precise moment to do it. . . .

I come now to the topic of forms or souls, which I consider to be indivisible and indestructible. I am not the first to hold this view. [Leibniz now has a long paragraph backing this up, mentioning Parmenides, Melissus, Hippocrates, Albertus Magnus, and others. He continues:] They all saw a part of the truth, but they weren't able to build on what they saw. Many of them believed in transmigration, others in the translation of •souls, instead of thinking of the transmigration and transformation of an •animal that is already formed. Others, at a loss for any other account of the origin of forms, have allowed that they begin through a genuine act of creation, believing that this act of creation happens every day when the smallest worm starts out in life. In contrast with that, the only soul-creating acts that I accept as occurring somewhere along the world's time-line are the ones in which rational souls are engendered; I hold that all non-thinking forms were created with the world. [Again he cites earlier philosophers who seem to have shared this view, and remarks that Aquinas seems to regard the animal soul to be indivisible. Then:] Our Cartesians go much further, because no genuine soul or substantial form can be destroyed or engendered, which is why they don't grant animals a soul (though Descartes, in a letter to More, testifies that he doesn't want to say for certain that they don't have one). No-one objects to the atomists' claiming that atoms last for ever, why should it be thought strange to say the same thing about souls, which are naturally suited to indivisibility,

especially since this follows necessarily from combining •the Cartesians' view about substance and the soul with •the whole world's view about regarding the animal soul. It will be hard to get the human race to give up the universally held opinion that animals have feeling—a catholic opinion if there ever was one! [Leibniz is jokingly using *catholique* in its original sense of 'universal'.]

Now my thesis about these souls, if it is true, is not only necessary according to the Cartesians but also important for morality and religion. Why? Because it can destroy a dangerous opinion for which many intelligent people have a liking and which the Italian philosophers—disciples of Averroes—had spread about the world, namely, that when any animal dies its soul returns to the world-soul. This conflicts with my demonstrations of the nature of an individual substance; and it can't be made clear sense of, because every individual substance must forever exist separately once it has begun to be. That is why the truths that I put forward are quite important; and given that everyone who acknowledges animal souls must accept them, the rest should at least not find them *strange*.

But to come to your doubts about this indestructibility:

(1) I had asserted that one must admit in bodies the existence of something that is truly a single entity, since matter or extended mass in itself can only be many entities. . . . Now, I infer that you can't have •many entities where there isn't •a single one that is genuinely an entity—that every multiplicity presupposes unity. You reply to this in many ways, but without discussing the argument itself, which is unassailable. Instead, you produce drawbacks and *ad hominem* objections [i.e. objections aiming to show that Leibniz isn't in a position to hold the view in question], and try to show that what I am saying is not enough to solve the problem. First, you are astonished at my using this argument, which would have been obviously

good in Cordemoy's eyes because he composes *everything* out of atoms, while I am bound to think it false (as you see it) because my account of substantial forms attributes them only to animate bodies, which constitute *less than one hundred-millionth* part of the material world—so that all the rest re-raise the many-entities problem. I see that I still haven't explained my hypothesis clearly enough for you to grasp it. For apart from the fact that I don't remember saying that souls are the only substantial forms, I am *far* from holding that only a tiny proportion of bodies are animate. What I actually believe is that *everything* is full of animate bodies. I think there are incomparably more souls than Cordemoy thinks there are atoms, because he thinks they are finite in number, whereas I maintain that the number of souls—or at least of forms—is wholly infinite, and that because matter is infinitely divisible we can't fix on a part so small that it doesn't *contain* animate bodies. (Or at any rate bodies endowed with a basic entelechy, i.e. (if you'll let me use the word 'life' so generally) with a life-source—that is, bodily substances that can in general be described as 'living').

- (2) As for this other problem that you raise, namely—
 the soul joined to matter doesn't make an entity that is truly one, because matter is not truly one in itself; and adding the soul to the body gives it only an
 •external-relational property, which can't endow it with
 •intrinsic unity.

I answer that it is the animate substance to which this matter belongs that is truly an entity, and the matter considered as the mass in itself is only a pure phenomenon or a well-founded appearance, as also are space and time. [See the paraphrase on page 43.] It doesn't even have precise, fixed qualities that can could let it *pass as* a determinate entity. I hinted at this in my previous letter. *Shape* is of the essence of a finite extended mass, and in nature it is never

exact and strictly determinate, because of the actual division ad infinitum of the parts of matter. There is never a sphere without inequalities, nor a straight line without curves mixed in with it, nor a curve defined by a certain formula without some other curve mixed in—and all this holds for small parts as well as large. The result is that *shape*, far from being constitutive of bodies, is not even a wholly real and determinate quality outside of thought, and a certain precise surface of a body can never be fixed on, as it could be if there were atoms. And I can say the same about size and of motion, namely that these qualities or predicates have something phenomenal about them as do colours and sounds; and although there can be much more clear knowledge about size and motion than about colours and sounds, they are no more able than those are to stand up to the most fine-grained analysis. The upshot is that extended mass considered without substantial form, consisting only of these qualities, is not bodily substance but purely a phenomenon like the rainbow; which is why philosophers have recognized that *form* is what gives determinate being to matter, and those who don't attend to that will, if they enter the labyrinth of the composition of the continuum, never escape. The only absolutely real things are indivisible substances and their different states. Parmenides and Plato and other ancient knew this well. [Leibniz then repeats his earlier point about its being colloquially all right to speak of 'a rainbow' or 'a flock of sheep' although these don't have substantial forms.]

(3) You say that I don't admit substantial forms except for animate bodies (I don't remember saying this), and on this you base an objection: since all animate bodies are organic, and every organic body is many entities, it follows that a form or soul, far from making an organic body *one* entity, requires it to be *many* entities so that it can be animate. I reply that supposing that there is a soul in animals or

other bodily substances, we must think about •animals in this respect in the way we all think about •men. A man is an entity endowed by his soul with a genuine unity, even though the mass of his body is divided into organs, vessels, fluids, and spirits, and these parts are undoubtedly full of an infinity of other bodily substances that have their own forms. Objection **(3)** is substantially in line with objection **(2)**, and this solution will serve for them both.

(4) You hold that there's no basis for conferring a soul on animals, and that if there were such a soul it would be a mind, i.e. a thinking substance, because we don't know of and can't conceive of any substances other than minds and bodies. And it is indeed hard to believe that an oyster thinks, that a worm thinks. This objection confronts everyone, apart from Cartesians; and we can't think that there is *no* basis for the belief that the whole of mankind has always had about animals' feeling; but, anyway, I think I have shown that every substance is indivisible and that consequently every bodily substance must have a soul, or at least a form that is analogous to the soul, since otherwise bodies would be no more than phenomena. [This paragraph is aimed at Arnauld's statement 'I am acquainted with only two kinds of substances, bodies and minds; the onus is on those who claim that there are others to prove it to us'. page 66] To assert that every substance that isn't divisible (that is, in my view, every substance whatsoever) is a mind and must think strikes me as incomparably bolder and more groundless than the preservation of forms [i.e. the thesis that forms are indestructible]. We have knowledge only of five senses and of a certain number of metals; should we infer from this that that's all there are in the world? It is much more likely that nature, which loves variety, has produced other forms in addition to the thinking ones. If I can prove that conic sections are the only figures of the second degree, that is because I have a clear notion of these lines, a notion

that supports a precise classification. But as we don't have a clear notion of thought, and can't demonstrate that the notion of *indivisible substance* is the same as that of *thinking substance*, we have no grounds for asserting it. I agree that the notion we have of thought is vivid, but some things that are vivid are not clear. [See the note on these terms on page 1.] We know thought only through inner sensation. . . . but all we can know through sensation are things we have experienced; and as we haven't experienced the workings of any other forms, it's not surprising that we have no vivid notion of them; for we wouldn't have that even if it were agreed that there are such forms. It is an error to wish to use confused notions, however vivid they are, to prove that something can't exist. And when I attend only to clear notions, it seems to me conceivable that phenomena that are divisible or made up of many entities can be expressed or •represented in a single indivisible entity, and that's all you need for conceiving of a substantial form, with no need to add thought or reflection to this •representation. I wish I could expound the differences or degrees of the other immaterial expressions that are devoid of thought—i.e. the ones that are neither material nor mental—so as to draw whatever lines can be drawn separating merely bodily substances from •merely living ones and separating both from animals; but I haven't given this enough thought, and haven't studied nature enough to be able to reach conclusions about forms by comparing their organs and operations. Malpighi is much inclined to believe—on the strength of some very considerable anatomical similarities—that plants can be included in the same genus as animals, and that they are imperfect animals.

(5) It remains only to meet the difficulties that you find in •the thesis of the indestructibility of substantial forms. I'll say at the outset that I am astonished that you find •this strange and untenable, because according to your

own views •it has to be accepted by anyone who thinks that a non-human animal has a soul and feeling. These supposed difficulties are merely prejudices set up by the imagination—the sort of thing that may hold up common people but can't affect minds capable of meditation. So I don't think it will be hard to satisfy you about this. Those who conceive •that there is something like an infinity of little animals in the smallest drop of water, as Leeuwenhoeck's investigations have shown, and who don't find it strange •that matter is everywhere full of animate substances, won't find it strange either •that there is something animate even in ashes, and •that fire can transform an animal and reduce it in size, instead of totally destroying it. What can be said of one caterpillar or silkworm may be said of a hundred or a thousand; but that shouldn't lead us to expect to see silkworms being born from the ashes. That is perhaps not the order of nature. . . . Are these little organic bodies, infolded by a sort of contraction from a larger body that has collapsed, entirely outside the domain of procreation, or can they can come back on stage in their own time? That's something I can't find the answer to. Those are secrets of nature about which men must admit their ignorance.

(6) The difficulty is no greater with largest animals; it only seems to be so because in their case the truth of the matter is harder to *imagine*. [Leibniz remarks that with large animals we see that they are born from the union of the two sexes, and adds that this seems to be true also of the smallest insects.] I learned some time ago that Leeuwenhoeck's views about this are quite close to mine: he maintains that even the largest animals are born through a kind of transformation; I don't venture to accept or reject the details of his opinion, but I regard it as very true considered as a general thesis; and Swammerdam, another great observer and anatomist, gives sufficient indication that he too was leaning that way.

Now, those gentlemen's judgments on these matters are as good as those of plenty of others. It's true that I don't see them pushing their opinion to the point of saying—as I do—that for living beings devoid of a rational soul decay and even death is also a transformation; but I believe that if this view had been put to them they wouldn't have thought it absurd. There's nothing so natural as to believe that something that doesn't begin doesn't perish either; someone who recognizes that for an animal to be generated is simply for an already-formed animal to be •augmented and unfolded will easily be convinced that decay or death is nothing but the •lessening and infolding of an animal that nevertheless stays in existence and remains alive and organic. Admittedly it isn't as easy to make this credible by particular observations as it is •the analogous thesis• about generation, but we can see why there is this difference: it is because generation moves along naturally and gradually, giving us time to observe it, whereas death *jumps* too far back, returning straight off to parts that are too small for us, happening (ordinarily) in too violent a way for us to be aware of the details of this regression. But we observe plenty of events that differ only in degree from death:

- sleep, which is an image of death;
- trances;
- the burial of a silkworm in its cocoon, which can count as a death;
- the resurrection of drowned flies by covering them with a dry powder without which they would have stayed dead for good;
- the resurrection of swallows that spend the winter in the reeds and are found apparently lifeless;
- our• experiences of restoring to life men who have been frozen to death, drowned or strangled.

(Not long ago an able man published a German-language treatise in which he reports examples of the last of those, including some from his own experience, and goes on to urge those who encounter drowned people to make more than the usual efforts to revive them, and prescribes the way to do it.) All these things can confirm my view that these different states differ only in degree; and if we can't resuscitate people who have died in other ways, that is either •because we don't know how or •because even if we did know our hands, instruments and remedies can't succeed, particularly when the dissolution goes at once to parts that are too small ·for us to be able to do anything with them·.

So we oughtn't to rest content with the notions that common people may have of life and death—not when the opposite is supported by analogies and proved by solid arguments. For I think I have shown well enough that if there are bodily substances there must be substantial forms; when you have admitted these forms or these souls you have to grant that they cannot be engendered or destroyed; ·which leaves us with a question about what happens at the death of a human or other animal·. Well, perhaps **(a)** the soul is transferred to another body, or perhaps **(b)** it keeps the same body, which is transformed; and of these **(b)** is incomparably the more reasonable. The time-hallowed belief in **(a)** seems to have come purely from a misunderstanding over transformation. To say **(c)** that animal souls exist without bodies, or hidden in an inorganic body, appears ·even· less natural ·than **(a)**·. The animal resulting from the contraction of the body of the ram that Abraham sacrificed in place of Isaac —is it to be called a 'ram' or not? That is a question of terminology, pretty much on a par with the question of whether a butterfly can be called a 'silkworm'. The only reason for your seeing a problem in this ram that was burnt to ashes is that I hadn't presented my ideas well

enough. You take it that no organic body remains in those ashes, and this justifies you in saying that this infinity of souls with no organic bodies would be a monstrosity; but my view is that in the course of nature there is never a soul with no animate body, and never an animate body without organs; and neither ashes nor other masses seem to me incapable of containing organic bodies.

As regards minds, i.e. thinking substances that can know God and discover eternal truths, I maintain that God governs them according to different laws from those by which he governs other substances. With all the forms of substances expressing *everything*, we might say that the lower-animal substances express the world rather than God whereas minds express God rather than the world. [In that sentence, 'rather than' translates *plutôt que*. Leibniz may have been using this phrase in its now obsolete sense of 'sooner than'. So his point may be that minds express the world *through* their expression of God, whereas for lower-animal substances the order is reversed. Or perhaps he meant 'better than'. bncause immediate representations are better, clearer, sharper than mediated ones.] So God governs those animal substances according to the material laws of force or of communications of movement, and governs minds according to the spiritual laws of justice, of which the others are incapable. And that is why the animal substances may be called 'material', because God sets them up in the manner of a workman or machinist, whereas with minds he has the infinitely more exalted role of monarch or legislator. God's only relation to •these material substances is the relation he has to •everything, namely that of creator to thing created; but he takes on another role [*personnage*] in relation to minds a role that leads us to conceive of him as having will and moral qualities, because he is himself a mind—as though he were *one of us*, to the point of entering with us into a social relationship in which he is the leader. This society or general

commonwealth of minds under this sovereign monarch is the noblest part of the universe, made up of ever so many little Gods beneath this great God.

For it can be said that created minds differ from God only as less differs from more, as finite differs from infinite. And it can truly be said that the whole universe was created only so as to contribute to the ornamentation and the happiness of this city of God. That's why everything is so arranged that •the laws of force—i.e. the purely material laws—work together throughout the whole universe to apply •the laws of justice or love, why nothing can harm souls that are in God's hands, and why everything must result in the greatest good of those who love him. This is why, since •minds must keep their personal role and moral qualities so that the city of God doesn't lose anyone, it is especially important for •them to preserve a kind of recollection, consciousness or power to know who they are. Their entire morality—their liability to penalties and punishments—depends on this; so they have to be free from any turn of events in the universe that would make them totally unrecognizable to themselves. If that happened to someone, it would turn him, morally speaking, into another person. In contrast with this, for the substance of a non-human animal all that is needed is that it remain the same individual in metaphysical rigour, although it may be subjected to every imaginable ·qualitative· change, since it doesn't have consciousness or reflection. What will the state of the soul be after death? And *how* is it protected from upsets ·that would deprive it of self-knowledge·? Only revelation can give us details about either of those; the jurisdiction of reason doesn't extend that far.

Another objection might be brought against me. I maintain that God has given a soul to every natural machine that is capable of it, defending this on these grounds:

- (1) It is possible to give souls to all those machines because souls don't interfere with one another and don't take up any space.
- (2) There is more perfection in something with a soul than in something without one, and God does everything in the most perfect possible manner.
- (3) There is no vacuum among forms any more than there is among bodies.

[A 'vacuum among bodies' is a region of space with no bodies in it; Leibniz often says how unreasonable it would be for God to allow such a thing. A 'vacuum among forms' is a possible *kind* of thing such that there are no actual things of that kind.] Now, the possible objection that I mentioned says that those same reasons would support the view that God has given rational souls—souls capable of reflection—to all animate substances. But I reply that laws superior to those of material nature, namely the laws of justice, are opposed to this. Why? Because the order of the universe wouldn't have allowed that all [those substances] were treated justly, so it had to be arranged that at least they wouldn't be treated unjustly; so they were created without the capacity for reflection or consciousness, and therefore unable to be happy or unhappy.

Bringing my thoughts together in a brief summary: I hold that every substance contains in its present state all its past and future states, and expresses indeed the whole universe according to its point of view, because no two things are so far removed from one another that there can't be commerce [see note on page 24] between them. And if a substance has a body, it expresses the states of other substances especially in accordance with ·their commerce with· its body, which it expresses more immediately ·than it does anything else·. So nothing occurs in a substance except what comes from its own depths by virtue of its own laws. . . . But it is aware of other things because it naturally expresses them, having

been created at the outset in such a way that it can do this in the course of events, and adapt itself to the other things as necessary. . . . As for bodily substances, I hold •that *mass*—thought of purely in terms of its divisibility—is a pure phenomenon; •that every substance has a genuine unity of the rigorous metaphysical kind; •that no substance can be divided, engendered or corrupted; •that every portion of matter must be full of substances that are animate, or at least living [see note on page 48]; •that what happens when animals are born or die is that they are transformed from smaller to larger or vice versa;. . . .

And above all •that God's works are infinitely greater, more beautiful, more numerous and better ordered than they are generally thought to be; and •that right down to their smallest parts they *ordered*, as though order were of their essence, this order being mechanical or organic. And •that therefore no hypothesis acquaints us better with God's wisdom than does mine, according to which there are *everywhere* substances indicating his perfection, substances that are just so many *different* mirrors of the beauty of the universe, with nothing empty, sterile, undeveloped and lacking perception. We have to accept as beyond doubt that the movements of bodies and the laws that govern them are subservient to the laws of justice and order, which are assuredly observed in the best possible way in the government of minds, i.e. of thinking souls, who enter into a social relationship with God and make up with him a kind of perfect city of which he is the monarch.

Now I think I have covered all the difficulties that you presented or at least mentioned, and also the difficulties that I thought you might still have. This has swollen this letter; but I couldn't easily have said all this more briefly, and if I

had it might have been somewhat obscure. Now I think you will find that my views square with one another and with accepted beliefs. I'm not overthrowing established opinions, but explaining them and developing them further. If you could find time some day to revisit what we finally decided about the notion of *individual substance*, you might find that anyone who allows me •those starting-points will have to grant me •all the rest. But I have tried to write this letter in such a way that it explains and defends itself—stands on its own argumentative feet. The questions can still be separated from one another: someone who isn't willing to acknowledge that there are souls in animals and substantial forms elsewhere is still free to approve of •my account of the unity of mind and body and of •everything that I say about genuine substances; and it will be for him to rescue the reality of matter and bodily substances as best he can, without invoking substantial forms or anything that has genuine unity—in terms of points or atoms perhaps? He may avoid making this choice by leaving the question open; we can always limit our researches as we think fit. But we oughtn't to linger along the way—even as enjoyable a way as this—if we want to have true ideas about the universe and the perfection of God's works, which still provide us with the most substantial arguments regarding God and our soul. . . .

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Arnauld did not reply to this letter, or to either of the two further letters Leibniz wrote to him in January 1688 and March 1690. Those aren't included in the present version of the Correspondence; neither adds much to any of the themes of the Correspondence up to here. Arnauld died in August 1694.