

The Original Notion of Cause

However muddled our notion of a cause may be it is clear that we would have difficulties in using the term 'cause' for the kinds of things Aristotle calls 'causes'.¹ We might even find it misleading to talk of Aristotelian causes and wonder whether in translating the relevant passages in Aristotle we should not avoid the term 'cause' altogether. For an end, a form, or matter do not seem to be the right kinds of items to cause anything, let alone to be causes. It is much less clear what our difficulties are due to. We might think that causes are events. Sometimes this is regarded as almost a truism. And, indeed, philosophers since Hume, who still—at least in his language—is wavering on the matter, have tended to think of causes as events. But I doubt that our difficulty with Aristotelian causes is due to the fact that ends, forms, and matter clearly are not events or anything like events. For apart from the fact that one may have doubts about the general thesis that causes are events, we do not have any difficulty in understanding Kant, e.g., when he talks as if a substance, an object, could be the cause of something in another object (*Critique of Pure Reason* B III), as if the sun could be said to be the cause of the warming up of the stone or the melting of the butter. And the reason why we do not have any difficulty in understanding this kind of language seems to me to be the following: a physical object like the sun or a billiard-ball can interact with other things, it can affect them and act on them so as to produce an effect in them. Quite generally our use of causal terms seems to be strongly coloured by the notion that in causation there is something which in some sense does something or other so as to produce or bring about an effect. Even if we do think of causes as events the paradigms we tend to think of, and certainly the paradigms Hume and Kant thought of, are events in which something does something or other; and we feel that we have to explain that it is only in a very metaphorical sense that an event could be said to produce an effect. Thus, though we may want to get away from such a notion, there is a strong tendency to conceive of causes as somehow active. And it seems

that our difficulty with the Aristotelian causes is due to the fact that they cannot even be conceived of in this way. A good part of the unfortunate history of the notion of a final cause has its origin in the assumption that the final cause, as a cause, must act and in the vain attempt to explain how it could be so. It is only with Aristotle's moving cause that we think that we readily understand why it should be called a cause. But it would be a mistake to think that Aristotle with his notion of a moving cause tried to capture our notion of cause or at least a notion we would readily recognize as a notion of cause, though it is significant that people have tended to think that among the Aristotelian causes it is only the moving cause which is a cause really. For Aristotle in more theoretical contexts will tell that it is not the sculptor working on his sculpture who is the moving cause, but the art of sculpture. And with the art of sculpture we have the same problems as with ends, forms, and matter.

Aristotle's notion of cause, then, is quite different from ours. But it is by no means peculiar to Aristotle. The same difficulties we have with Aristotle and the Peripatetics we also have with Plato or Epicurus. Ideas do not seem to be the kind of thing that could cause anything, nor does the void (cf. Epicurus in DL X 44). But how did it come about that people got to think that a cause has to be the kind of item which can do something or other so as to bring about an effect?

From a remark in Sextus Empiricus it is clear that it was already in later antiquity that the notion of a cause had been narrowed down to fit the notion of an active cause. For in his discussion of causality Sextus tells us (*PH* III 14) that despite all the differences among philosophers concerning causality we still might assume that they all agree on the following general characterization of a cause: the cause is that because of which in virtue of its being active the effect comes about.² Sextus, then, claims that it is generally agreed that causes are items which somehow are active and through their activity bring about an effect. This claim would be puzzling, indeed, given what we have said earlier about Plato, Aristotle, and Epicurus, unless it reflected a general shift in the notion of cause. But we have good reason to accept Sextus' claim. First of all, Sextus shows himself to be quite aware of the fact that even non-active items get called 'causes'. For in the preceding paragraph he tells us that he now wants to turn to a consideration of the active cause in general (*to energetikon aition*). There would be no point in adding the adjective 'active' if Sextus were not aware that non-active items, too, are called causes. So Sextus must assume that though philosophers go on to call such items as Platonic ideas or Aristotelian causes 'causes', they nevertheless are agreed that, strictly speaking, only active items are causes. Second, there is independent evidence that Sextus had good reason to think so. Clement, e.g., tell us (*Strom.* I 17, 82, 3) 'we say . . . that the cause is conceived of as producing, as active, and as doing something'³ (cf. also *Strom.* VIII 9, 25, 5). As we learn from Simplicius' commentary on the *Catego-*

ries (327, 6ff.), Iamblichus explained a passage in Plato's *Philebus* telling us that it is that which is producing something (*to poioun*) which is, strictly speaking, the cause, whereas matter and form are not causes at all, but auxiliaries (*sunaitia*), and the paradigm and the end only qualifiedly are causes. We find similar remarks throughout the Neoplatonic tradition. Damascius, e.g., tells us that every cause is doing something (*drastērion*, in *Phileb.* 114, 6 W.). The Peripatetic distinction of kinds of causes is adapted to the shift by claiming that it is the moving cause which is most strictly speaking the cause (*aition to kuriōtaton legomenon*), as we can see from a passage in Simplicius (in *Phys.* 326, 15ff.). The shift in terminology from 'causa movens' to 'causa efficiens' may be another reflection of the change in notion (cf., e.g., *Simpl. in Phys.* 326, 25). Evidence of this kind is easily multiplied, and thus we have good reason to believe that the notion of a cause by Sextus' time had changed in such a way as to be restricted to items which can do something or other and thus cause something. It also seems to be fairly clear how this change in the notion of a cause did come about. Seneca (*Ep.* LXV 11; cf. 2ff.) still criticizes Plato for assuming the five kinds of causes we just saw Iamblichus talking about on the grounds that there is just one kind of cause, that which acts so as to produce the effect: "The Stoics take the view that there is just one cause, that which does something (*facit*)" (LXV 4). In general it is the Stoics who insist that causes are active, and so it seems to be their influence which has brought about the change in question.

But Stoic influence on thought about causes is not restricted to this point. When we look, e.g., at Sextus' discussion of causes in the *Outlines of Pyrrhonism* it turns out that the distinctions of kinds of causes Sextus makes are all of Stoic origin. And hence it might be worthwhile to review our evidence concerning the Stoic doctrine of causes, not just to find out why the Stoics would insist that causes have to be active, but in the hope of getting somewhat clearer on the history of the notion of a cause in general.

Before we go into the details, though, it should be pointed out that the Stoics seem to distinguish at least three uses of 'cause' of increasing narrowness. There is, first of all, a very general use of 'cause'. It seems to be this use we have to think of when Stobaeus (*Ecl.* I, p. 138, 23) says "Chrysippus says that a cause is a because of which (*di' ho*)." Just like the English preposition 'because of' and the German '*wegen*' the Greek '*dia*' with the accusative can cover such a variety of explanatory relations that it would rather comfortably accommodate anything that had been called a cause, in ordinary discourse or by philosophers, including the Aristotelian causes (cf. *Phys.* 198^b 5ff.).

One may, of course, doubt whether Chrysippus' characterization of a cause is supposed to be so generous as to allow us to call all the things causes which actually are called causes. In this case one would have to assume that '*dia*' here is used in a narrower technical sense. But there is evidence that the Stoics were willing to allow for such a generous use of 'cause', though, at the same time,

they also insisted on a narrower use. When, then, Clement (VIII 9, 20, 3) says: "It is the same thing, then, which is a cause and which is productive; and if something is a cause and productive it invariably also is a because of which; but if something is a because of which it is not invariably also a cause" and then goes on to give antecedent causes as examples of things which are because of which, but not causes in this sense, it is natural to assume that he is relying on a contrast between a more general notion of a cause according to which any because of which counts as a cause, and a narrower notion which he wants to adopt, according to which a cause not only has to be a because of which, but also productive. Hence it seems that when Chrysippus characterizes the cause as the because of which he allows for a very general notion of a cause.

Then there is the narrower notion of a cause, which Clement in the passage quoted refers to, according to which causes are restricted to those things which actually do something or other to bring about an effect. It is this notion of an active cause of which Sextus claims that it is one all philosophers recognize and accept. It is not just the because of which, but the because of which through whose activity the effect comes about, to use Sextus' characterization. But even this narrower notion of an active cause covers different kinds of causal relations which the Stoics will distinguish by distinguishing various kinds of causes. And among these kinds they will single out that which is the cause, strictly speaking, namely the perfect (*autoteles*) or containing (*sunektikon*) cause. Since the most general notion of a cause is not specifically Stoic, I shall in the following discuss first the general Stoic notion of an active cause and then the various kinds of causes distinguished, in particular causes in the narrowest and strictest sense.

The General Notion of an Active Cause

We said that one had to explain in what sense Aristotelian causes could be called causes. Ends or forms do not seem to be the right kinds of items to be causes. And, as we have seen, one reason for this may be that they are entities, whereas causes, one might think, are events, facts, things one does, in short, items of the kind I shall call propositional items (I take all these items to be propositional items in some very narrow sense, but for our purposes here it will do to take the term in a very generous sense).

Now it is true that at least from the fifth century B.C. onward such propositional items, too, come to be called causes, *aitia*. But throughout antiquity, as far as I can see, it is non-propositional items like Aristotle's causes which are referred to when causes are discussed systematically. This is not to deny that philosophers when they state the cause of something sometimes refer to propositional items ("The cause of this is that . . ."). In this they just follow the shift in ordinary language mentioned above. Aristotle sometimes even refers to propositional items when he gives examples of his kinds of causes. But in other

passages it is clear that when he distinguishes kinds of causes he has entities, non-propositional items in mind. And the later tradition quite definitely treats Aristotelian causes as non-propositional. Similarly, Epicurus treats causes as non-propositional when he regards the atoms and the void as the ultimate causes of everything (DL X 44). The same is true of the five causes of the Middle Platonists (Sen. *Ep.* LXV 7–8) and of the six causes of the Neoplatonists (cf. *Simp. in Phys.* II. 2–3; *Olymp. in Phaed.* 207, 27ff.; *Philop. De aet. mundi* 159, 5ff.). And it is certainly true of the Stoics who require a cause to be a being, an entity, a status they deny to propositional items.

The facts of the matter become clearer if we take into account a terminological distinction which Stobaeus attributes to Chrysippus (*Ecl.* I, 139 3f. W.). This distinction has a basis in the original use of the word ‘cause’ which distinguished between an *aition* and an *aitia*. But this distinction is not preserved by Aristotle; and as a result it is much less clear than it would otherwise have been whether we are considering propositional or non-propositional items when we talk about causes. Chrysippus’ distinction is the following. Having explained that an *aition*, a cause, according to Chrysippus is an entity, Stobaeus goes on to say, “But an *aitia*, he says, is an account of the *aition*, or the account about the *aition* as *aition*”³). We might have doubts as to the precise meaning of this short characterization of an *aitia*, if we did not have a fragment of Diocles of Carystus (frag. 112 Wellmann) preserved by Galen. Diocles discusses etiology, explanation, in medicine, and in this discussion he uses ‘the account about the *aition*’ interchangeably with ‘the *aitia*’ in the sense of ‘the reason’ or ‘the explanation’. Obviously the idea is that the *aitia*, the reason or explanation, is a *logos*, a propositional item of a certain kind, namely a statement or a truth about the *aiton*, the cause, or rather the relevant truth about the cause, the truth in virtue of which it is the cause. And this seems to be exactly the characterization of an *aitia* Stobaeus is attributing to Chrysippus.

By Chrysippus’ time ordinary usage of ‘*aition*’ and ‘*aitia*’ no longer followed that distinction. But there was some basis for the terminological distinction in the original use of these words. ‘*Aiton*’ is just the neuter of the adjective ‘*aitios*’ which originally meant ‘culpable, responsible, bearing the blame’, whereas the ‘*aitia*’ is the accusation, what somebody is charged with having done such that he is responsible for what happened as a result. And if we look at Plato’s remarks on explanation in the *Phaedo* we see that such a distinction in use between ‘*aition*’ and ‘*aitia*’ is still preserved. In spite of its ample use of both the adjective and the noun, the passage reserves the adjective for entities like Anaxagoras’ Nous and Socrates’ bones and sinews, whereas an *aitia* throughout seems to be a propositional item, the reason or explanation why something is the way it is. It is true that Aristotle does not preserve the terminological distinction. And Galen in one place tells us explicitly that he uses ‘*aition*’ and ‘*aitia*’ interchangeably (IX 458, 7 K). But even if the terminological distinction was not generally accepted,

the distinction itself between causes, on the one hand, and reasons and explanations, the truths about causes in virtue of which they are causes, on the other, was generally accepted. In fact, for the very reasons the Stoics rejected, e.g., Aristotelian final causes as causes, properly speaking, they also had to reject propositional items as causes. Since, on the Stoic view, propositional items are not entities, but only *lekta*, somethings, they are not items of the right kind to cause anything. How would an event go about causing something?

So there would be general agreement that causes are non-propositional items. And there would be general agreement that the notion of a cause is closely tied to the notion of an explanation. For an item is a cause only insofar as something is true of it in virtue of which it is the cause. If Brutus is a cause of Caesar's death he is a cause insofar, e.g., as it is true of him that he stabbed Caesar. And it is exactly these truths about the causes of something which will be regarded as affording an explanation of what the causes are causes of.

It is at this point, though, that the disagreement among ancient philosophers will start. For reasons which will become apparent, the question will arise to which of the two notions, cause or explanation, should we give priority. It seems fairly clear that the opponents of the Stoics give priority to the notion of explanation. They are looking for an account of something and they will just call causes those items which have to be referred to in the account. If it is the presence of the idea of justice which accounts for the fact that something is just, then the idea of justice will be a cause. It is clear that on this view the notion of a cause completely loses its connotation of responsibility. The Stoics, on the other hand, are not so much interested in explanation as they are in responsibility.

Though this is a matter which would need a good deal of elaboration, the following statement by Strabo about Posidonius does seem to me to reflect the Stoic attitude in general well enough: "With him [sc. Posidonius] we find a lot of etiology and a lot of Aristotelizing which the members of our school shy away from because of the obscurity of the causes" (II 3, 8). According to Strabo, then, the Stoics in general are hesitant to engage in etiology because the real causes are so hidden and obscure; Posidonius is an exception, and in this respect he is rather more like a Peripatetic. There is abundant evidence to support Strabo's testimony. Later Stoic physics, presumably under the influence of Posidonius, recognizes etiology as a separate part of physics (DL VII 132). It in turn is divided into two parts, one whose subject matter the philosopher shares with the physician, namely physiology and psychology, and another part whose subject matter the philosopher shares with the mathematical sciences, namely natural, in particular meteorological, phenomena. As to the second part of etiology, we not only know how much of an effort Posidonius made to find explanations for particular phenomena like the tides. The relevant part in Diogenes' exposition of Stoic physics (VII 151, 3–156, I), e.g., refers again and again to Posidonius. In fact the only other authority that is mentioned in the whole section is Zeno.

But we also know from a passage in Seneca (*Ep.* LXXXVIII 26–27) and a precious excerpt from Geminus' *Epitome of Posidonius' Meteorologica* (preserved through Alexander's commentary on the *Physics* by Simplicius, in *Phys.* 291, 21ff.) that Posidonius held views concerning causation and explanation which would deserve separate treatment. He took, e.g., the view that only the natural philosopher can have knowledge of the true account of the cause of a phenomenon, whereas the mathematical scientist can only provide us with the hypotheses or possible explanations, as Heraclides Ponticus provided us with a possible explanation of the apparent motion of the sun by assuming a somehow stationary sun and a somehow revolving earth (*ibid.* 292, 20–23). The other part of etiology which concerns itself with psychology and physiology among other things deals with the passions of the soul (cf. DL VII 158). Of Posidonius' views on this particular topic we are well informed by Galen. Galen in his *De placitis Hippocratis et Platonis* goes to considerable lengths to criticize Chrysippus' views on the matter, and in doing so he relies heavily on Posidonius' criticism of Chrysippus which he also sets out in some detail. It is characteristic that it is a recurring complaint that Chrysippus fails to state the cause or claims that the true explanation is uncertain or too difficult to figure out (cf. 348, 16ff. Mueller; 395, 12ff.; 400, 2ff; 401, 9ff.; 439, 4ff., to just mention the Posidonian passages). It is evidence of this kind which supports Strabo's testimony that Posidonius is an exception and that Stoics in general were hesitant to concern themselves with etiology, with the explanation of particular phenomena.

Hence it would seem that the Stoic interest in causes does not arise from an interest in actual explanation. The evidence, rather, suggests that the Stoic interest in causes arises from their interest in responsibility. For when we look at the actual use to which the Stoics put their theory of causes it always seem to be a matter of allotting and distributing responsibility. For example, whatever things do is determined by fate, but fate is a mere helping cause (*sunergon*). The real cause, the things which really are responsible, are the things themselves; they do what they do out of their own nature or character. Or, the wise man may say what is false. But if, as a result, somebody believes it, it is not the wise man who is the cause, but the person who believes it has only himself to blame. Only dumb and wicked people believe falsehoods. It is in contexts of this sort that the Stoics introduce their doctrine of causes. Moreover, as we shall see later, the Stoic distinction of various kinds of causes is a refinement on an ordinary intuitive distinction of various kinds of responsibility.

So for the Stoics the notion of a cause still has a connotation, however tenuous, of responsibility. But for the notion of responsibility to have any content at all that which is responsible must in some sense or other have done something and thus become responsible. It is ultimately for this reason, I take it, that the Stoics insist that causes are active, that they must be the kinds of items that can cause something. But in restricting causes to active items the Stoics seem to

loosen the tie between causes and explanation. For to state the causes of something will no longer be a matter of stating all the relevant truths about all the relevant factors which have to enter into a complete explanation, but a matter of referring to just those factors which actively contribute to the effect. And the relevant truths about these will not amount to a complete explanation, or so it would seem. We shall see later, though, that the Stoics conceive of the cause in their narrowest sense in such a way that it recaptures the explanatory force causes seem to lose owing to their restriction to active causes. Nevertheless, it is important to realize that the shift in the notion of a cause threatens the simple and straightforward conceptual link between cause and explanation.

But why should somebody who did not share the Stoics' view that what mattered first of all was the question of responsibility accept the claim that causes, properly speaking, have to be active? The Stoics might argue in the following way: when the question 'What is the *aition*?' was a question of legal, moral, or political responsibility it may have been difficult to come up with the answer in particular cases, but it would have been clear that the person responsible would be a person who had done something or other which he should not have done such that as a result of his doing it something has gone wrong for which he is responsible. (The question of responsibility originally is restricted to cases of blame. It is then extended to all noteworthy cases, including cases in which praise is to be bestowed. It is only then that the question of responsibility gets extended beyond the sphere of human or personal action, which is, of course, facilitated by an unwillingness to determine the limits of personal agency in a narrow way so as to exclude all but human actions. Who knows about the winds and the sea?) When then the use of '*aition*' was extended such that we could ask of anything 'What is its *aition*?' this extension of the use of '*aition*' must have taken place on the assumption that for everything to be explained there is something which plays with reference to it a role analogous to that which the person responsible plays with reference to what has gone wrong; i.e., the extension of the use of '*aition*' across the board is only intelligible on the assumption that with reference to everything there is something which by doing something or other is responsible for it.

This would seem to be a rather questionable assumption. Even in the case of real responsibility we have to construe the notion of doing something quite generously such that forgetting to do something and in general failing to do something which one can be expected to do count as doing something. But if we extend the notion of responsibility across the board, we no longer have a set of expectations such that any violation of these expectations counts as a doing. As a result there are considerable difficulties in determining exactly what is to count as doing something and as being active. If columns support a roof, this, presumably, counts as a case of doing something, but why? Nevertheless, we do have intuitions in this matter which go far beyond, and to some extent cor-

rect, the grammatical active-passive distinction. We have a similar difficulty in determining what is to count as the analogue of the thing responsible in a case of real responsibility. In this respect there had been considerable difficulties even when we just had to deal with cases of real responsibility. We had, e.g., to decide that the thing which is responsible has to be a person, rather than an object or an animal. But if the notion of responsibility is to be extended across the board, it seems that we need a new set of instructions as to how one finds what is responsible in this extended sense. To the extent, though, that the Stoics will claim that the common notion of a cause does provide us with such instruction and that they will provide us with further instruction, their point may have some weight, after all.

We find another argument to the effect that causes should be conceived of as active in Seneca, *Ep.* LXV. It seems that, with the exception of the Epicureans, in the case of the swerve all philosophers would have agreed that for any particular thing a complete explanation of that particular thing will involve reference to something which did something or other, i.e., reference to a moving cause in the vulgar sense of 'moving cause'. But once it is agreed that in every case a moving cause is involved, why should we extend the notion of cause to also cover whatever other items do enter into our explanation? Why should we not use Plato's distinction in the *Phaedo* between causes and necessary conditions (or, rather, necessary items, remembering that 'how' in the phrase '*aneu hou*' at *Phd.* 99^b does not range over propositional items) and count the other items, e.g. matter, among the necessary conditions? That the presence of something is a necessary condition does not yet mean that it is a cause. This seems to be the line Seneca takes in *Ep.* LXV. He claims that there is just one kind of cause, the active cause, and that if the opponents assume more kinds of causes it is because they think that the effect would not obtain if it were not for the presence of certain other kinds of items in addition to an active cause. In LXV 4–6, e.g. when he lists and explains Aristotle's four causes, in each of the first three cases he explains why the presence of each of them is a necessary condition for obtaining the result. And having explained the fourth cause he adds the rhetorical question 'or don't you think that we have to count among the causes of any work brought about anything such that if that thing had been removed the work would not have been brought about?' (LXV 6). And again in LXV 11 he suggests that the reason why Aristotle and Plato posit a whole bunch of causes ('*turba causarum*') is that they think that the presence of items of these various kinds is required for a result to come about. But if this is the reason why all these things deserve to be called causes, Seneca argues, the four or five kinds of causes of the Peripatetics and the Platonists do not suffice in the least.

Now, apart from the threat of a proliferation of causes, this argument will only have force if it is already granted that the moving cause does have a privileged status and is not just another necessary condition. Hence, it does presup-

pose some other argument like the one from the basic meaning of *'aition'* presented above. Another argument to fill the gap left by Seneca's argument could have been the following. We have to remember that the various causes supposedly involved in a particular case are not necessary conditions the conjunction of which is sufficient. They, rather, are items the necessary conditions are truths about. What is it, then, that has to be true of the various causes for the result to come about? In some sense they will all have to be present. But this will not be sufficient to account for the result. For in the case of the moving cause it will not just be its presence which is required. It will also be necessary that it does or has done something or other. And this does seem to set it off from the other causes for which we only require their mere presence.

That active causes come to be accorded privileged status may also be a matter of change of perspective. It may or may not be the case that Plato and Aristotle had committed themselves to a position from which it followed that everything is determined by antecedent causes. Even if Aristotle was concerned about determinism, his reflections on the matter seem to have been of little influence on his doctrine in general. Certainly the question had not been a preoccupation of theirs. But with the Stoics' insistence that everything that happens, including our actions, is antecedently determined, this problem starts to occupy center-stage. And the whole technical machinery of explanation gets applied to cases for which it was not really designed, namely to particular events, to find out whether they admitted of an explanation which was compatible with the assumption that not everything is antecedently determined. The problem of determinism makes one look at particular events as the concrete events they are, happening at the particular time they do, rather than just as instances of some general pattern of behavior. As such they could be accounted for in terms of the nature or form of the thing involved. But if we have to ask why this particular thing behaved in this particular way at this particular time, it seems clear that a reference to the general nature of the thing, or its end, or its matter, or its paradigm will not do. In fact, it seems that these, with whatever their presence entails, only form the more or less stable background on which we have to explain the particular event by referring to some particular antecedent change, which, given a stable background, makes the relevant difference. And hence the item involved in that change does seem to be in a privileged position, and, if anything, it seems to be it which deserves to be called the cause.

Once it is admitted that causes have to be active, have to do something or other in order to bring about the effect, it follows easily for the Stoics that causes have to be bodies. For only bodies can do something and can be affected, only bodies can interact. At this point it is important to remember, though, that for the Stoics not just physical objects, but also stuffs and qualities and mixtures thereof are bodies. So a quality could qualify as a cause.

Causes, properly speaking, then, for the Stoics are bodies which do some-

thing or other such that the fact that they do what they do is at least an important ingredient in the explanation of whatever it is that the causes are causes of.

But what is it that the causes are supposed to be causes of? We so far have been talking as if it were generally agreed that it is propositional items, facts, events, and the like, that are caused or explained. And this seems to fit the common use of *'aitia'* and *'aition'*. It is true that in common use *'aition'* or *'aitios'*, e.g., can be used with a noun in the genitive as in 'the *aitioi* of the murder', i.e. 'those responsible for the murder' (Hdt. IV 200, I). But it is clear that in such cases the noun is the nominalization of an underlying sentence. It is also true that Aristotle often talks as if causes were causes of entities like a statue, a man, or health. But again, we might be inclined to say that this is just a way of speaking; causes of a statue are cause for their being a statue or for something's being a statue.

Nevertheless, there does seem to have been some disagreement. For Clement (*Strom.* VIII 9, 26, 1 = *SVF* II 345) reports that some philosophers assume that causes are causes of bodies. From Sextus (*M* IX 212) we learn more specifically that according to Epicurus the atoms are the causes of their compounds, whereas their incorporeal properties (*sumbēbekota*) are the causes of the incorporeal properties of the corresponding compounds. It is not clear, though, whether we should assume that this reflects a serious disagreement about the notion of a cause, or whether we owe this bit of doxography to somebody who was looking very hard to find somebody on whom he could pin the view that causes can be causes of corporeal items as well as of incorporeal items. After all, even if Epicurus had said what is attributed to him, this way of speaking admits of so many constructions that little can be made of these words, unless one assumes that Epicurus chose this manner of speaking because he had taken a position on the issue. But this is hardly plausible, for it would seem that this is exactly the kind of question which Epicurus would regard as sophistical.

We could leave the matter at that, if we did not have additional evidence which suggests that there actually was a dispute over the question what causes are the causes of. This is a disagreement both Clement and Sextus report on. Sextus (*PH* III 14) distinguishes between what we know to be the Stoic view, namely the view that causes are causes of a predicate's being true of something, and the view that causes are causes of appellations (*prosēgoriai*). Clement (*Strom.* VIII 9, 26, 4) attributes the latter view to Aristotle. Unfortunately, it is far from clear what the contrast between the two views is supposed to be, and Sextus' examples does not make the matter any clearer. On the first view, according to Sextus, the sun's heat is the cause of the wax's being melted (*tou cheisthai*), whereas on the second view it is the cause of the melting of the wax (*tēs chuseōs*).

It is fairly clear that the contrast is supposed to be indicated by the use of a verb in the first case and a corresponding noun in the second. This would also

fit the examples given by Clement who says “But Aristotle thinks that causes are causes of appellations, i.e. of items of the following sort: a house, a ship, a burning (*kausis*), a cut (*tomē*),” whereas examples of what is caused on the other view seem to be something’s being cut (*temnesthai*) or something’s coming to be a ship (*gignesthai naun*). Also it would fit the fact that nouns in Greek grammar are called ‘appellations’ or ‘appellatives’; the appellatives in Greek grammar are a word-class which comprises both our nouns and our adjectives. Finally, it is presumably relevant that the term we have rendered by ‘predicate’, namely ‘*kategorēma*’, sometimes is restricted to what is signified by verbs or even is used synonymously with ‘verb’ (*rhēma*).

Now it is hardly plausible that according to the view in question causes are causes of expressions of whatever kind. To make reasonable sense of the position we have to assume either that what is meant is that causes are causes of something’s being properly called something or other or that ‘appellation’ here does not refer to a certain kind of expression, but to what is signified by an appellative. There is a passage in Stobaeus (*Ecl.* I, p. 137, 5 W) in which ‘appellation’ is used in the second way, but this may be due to a confusion on Stobaeus’ part. Hence it would be preferable if we got by on the assumption that ‘appellation’ here has its usual meaning as a grammatical term. But what would be the point of saying that a cause is a cause of something’s being properly called (an) *X* where ‘*X*’ is a noun or an adjective? Given the lack of evidence the answer has to be quite speculative. It might, e.g., be the case that verbs are associated with processes or coming-into-beings as opposed to the being of something; hence, perhaps, the contrast in Clement between a ship or the being of a ship or something’s being a ship and the coming-into-being of a ship or something’s coming to be a ship. But if this is the intended contrast, we have to assume that the nouns corresponding to the verbs are taken not to signify the process signified by the verbs. Given the standard ordinary use of these nouns, this does not seem to be a plausible assumption. But if we look at Simplicius’ commentary on the *Categories*, we find that under the category of doing he systematically distinguishes between something’s doing something (*poiein*) and a doing (*poiesis*) (301, 29ff.). And we may assume that Simplicius thinks that a corresponding distinction has to be made for all the verbs associated with the category. Similarly, Clement in his discussion of causality refers to a view according to which a cut (*tomē*) has to be distinguished both from something’s cutting and something’s being cut (*Strom.* VIII 9, 26, I; ‘*temnein*’ and ‘*temnesthai*’). The basis for the distinction in Simplicius is that ‘a doing’ may refer either to an activity or to its effect (301, 33–35). And this suggests that our appellatives in Sextus and Clement are to be taken in the latter way to refer to the effects. There is an obvious difficulty as to what these effects as distinct from the processes and activities are supposed to be. Presumably a (finished) cut is distinct from the thing cut, the process of its being cut and the activity of cutting it, but not from its being

(finally) cut. Are we then supposed to say that a house-building (*oikodomesis*) is distinct from the thing built? Presumably not, for otherwise the activity of building a house will have two effects, a house and a house-building. It is a house, rather than a house-building, which Clement gives as an example parallel to a cut and a burning, and it is a ship, rather than a ship-building, which he contrasts with the coming-into-being of a ship. But this lack of parallel can be explained as being due to the fact that houses and ships, as opposed to cuts and burnings, are substances. Hence a house-building is distinct from the house's being in the process of being built and the activity of building it, but it is not distinct from the house's being (finally) built and hence not distinct from the being of the house. Thus the text can be read as distinguishing coming-into-beings or processes and beings, between the being of a cut or something's being (finally) cut and the cutting of it or its being cut, between the being of a ship or its being (finally) built and the building of it or its being built. But what would be the point of such a distinction? The idea might be that causes are causes of entities, of the being of things, rather than their coming-into-being, and that their coming-into-being has to be understood in terms of their being rather than the other way around. That Peripatetics should conceive of causes as causes of entities is not so surprising given the Aristotelian program of determining the principles and causes of what there is, where 'what there is' naturally is understood not as referring to all the facts there are, but rather as referring to all the particular entities there are. Really to know all these is to know all that there is to be known (cf. Arist. *Metaph.* M 10 1087^a 15ff).

If, on the other hand, one does not focus one's thought about causes on entities and their being, but on particular events because they are what one is mainly concerned with when one is worried about determinism, it seems natural to make causes causes of propositional items, especially since that corresponds to the ordinary use and the original notion of '*aition*'. It also seems natural to make some room for propositional items in one's ontology. This is exactly what the Stoics do when they admit *lekta*, if not as beings (*onta*), at least as somethings (*tina*). In fact, it is not clear to me that the notion of a *lekton* was introduced by the Stoics in the context of their philosophy of language rather than their ontology. For the first Stoic who we know used the term '*lekton*' is Cleanthes, and he used it precisely to say that causes are causes of *lekta* (Clem. *Strom.* VIII 9, 26).

It seems, though, that the Stoics thought that the canonical representation of the causal relation was not a two-place relation between a body and a propositional item, but as a three-place relation between a body and another body and a predicate true of that body. Thus a knife is the cause for flesh of being cut, fire is the cause for wood of burning. It is in this sense that the Stoics often are reported as claiming that a cause is a cause of a predicate (*katēgorēma*, cf. Clem. *Strom.* VIII 9, 26, 4). Now it is true that in Greek there is a widespread use of

the construction 'a cause of something for something' where the dative represents the person or the object affected and the genitive represents what, as a result, is true of the object affected. And presumably it is also true that we could rewrite all Greek causal statements so as to satisfy this normal form. But of what importance is this for the notion of cause?

Presumably, this is supposed to be of relevance in at least three respects. It brings out the fact that for there to be a cause there has to be something which is affected, and since only bodies can be affected this has to be a body. Second, whether something does or does not produce a certain effect in something does depend on the nature and state of the thing affected. It has to be the right kind of body. And third, we have to remember that though we want to see how one explains particular facts, we also want to have general explanations which tell us what in general causes a certain predicate to be true of something.

The general notion of a cause, properly speaking, according to the Stoics, then, seems to be the following: a cause is a body which does something or other and by doing so brings it about that another body is affected in such a way that something comes to be true of it. It may very well be the case that the Stoics think that this is just a characterization of the common notion of a cause.

Kinds of Causes and the Cause in the Strict Sense

The Stoics reject the swarm of causes ('turba causarum', Sen. *Ep.* LXV 11) of their opponents and allow only for an active cause. But within the notion of such an active cause as we have outlined it so far they, too, allow for different kinds of relation between cause and effect and hence for different causes. As Alexander puts it, they have a whole swarm of causes (*smēnos aitiōn*, *Fat.* 192, 18 = *SVF* II, p. 273, 18).

Unfortunately, our sources concerning these various kinds of causes are rather unclear. Hence it may be best to start with what seems to be a quotation from Chrysippus in Cicero's *De fato* 41, in which Chrysippus distinguishes two kinds of causes. Cicero says about Chrysippus: For of causes, he says, some are perfect and principal ("perfectae et principales"), other auxiliary and proximate ("adiuvantes et proximae"). Hence, when we say that everything happens by fate through antecedent causes, we do not want this to be understood as saying "through perfect and principal causes," but in the sense of "through auxiliary and proximate causes."

The point of the distinction, if one looks at the context, would seem to be the following. Chrysippus wants to maintain that everything that happens is fated, is determined by antecedent causes. On the other hand, he also wants to maintain that this does not rule out human responsibility, because, though human actions are determined by antecedent causes, it is nevertheless the human beings themselves, rather than the antecedent causes, who are responsible for these actions.

Quite generally, though what a thing does is determined by an antecedent cause, it is not the antecedent cause but rather the thing itself or something about that thing which is responsible for what it does, though, of course, not necessarily morally responsible; for only with beings of a certain sort and under certain further conditions is responsibility moral responsibility.

We are given two kinds of examples to illustrate the point, one from human behavior and one from the behavior of inanimate objects. Suppose we perceive something and get some impression (e.g., the impression that there is a piece of cake over there or the impression that it would be nice to have that piece of cake now). Now it will depend on us whether we accept or give assent to this impression. If we do, we will think that there is a piece of cake over there or that it would be nice to have that piece of cake now and will feel and act accordingly. And if we do think so and feel and act accordingly, it will have been the impression which brought this about and hence was the antecedent cause of our action. But the impression by itself does not necessitate that we should think, feel, and act that way. Other people or we ourselves at other times would not accept or give assent to the same impressions; it is not the impression, but something about the person which makes the person accept the impression, though the person would not accept the impression and act accordingly if he did not have that impression, and though there is a sense in which the impression does bring about or cause whatever action the person takes as a result.

Chrysippus' point about causes, then, as illustrated by this example is this: everything does have an antecedent cause; our actions, e.g., have as their antecedent cause an impression. But these antecedent causes are not the kind of causes that necessitate the result, they are only '*causae adiuvantes et proximae*'. The '*causa perfecta et principalis*' which necessitates the result lies in ourselves, it is that about us which makes us accept the impression and act accordingly.

The examples from the behavior of inanimate objects are motions of a cylinder and a cone or spin-top. 'They could not start to move unless they received a push. But once that has happened, he thinks that, for the rest, it is by their own nature that the cylinder rolls and the spin-top turns' (42 *fin.*). The idea here seems to be that the person who gave the cylinder or the column a push is the antecedent cause. Without the push the cylinder would not roll, but the fact that the person gave it a push does not yet account for the fact that it is rolling. What makes it roll is something about the cylinder itself. And it is that which is the perfect and principal cause of its rolling.

It is important that the examples should not be misinterpreted in the following way: we might think that Chrysippus only wants to point out that if one gives an object a push it will depend very much on the kind of object it is how it will be affected, a cylinder will roll one way, a cone another, and a cube will not roll at all. But Cicero does not just say in 42 that the cylinder rolls in virtue of its own peculiar nature ('*suapte natura*'), he also tells us in 43 that both in the

case of human behavior and the case of the cylinder, once the thing has received an impulse, it will move for the rest 'suapte vi et natura', 'by its own force and nature'. This implies that there are two forces, two *vires* involved: not just the external *vis* of the antecedent cause, the person who gives a push (cf. 'nulla vi extrinsecus excitata' in 42), but also a *vis* on the inside, and it seem to be that *vis* on the inside which keeps the cylinder rolling once it has gotten its initial impulse. This suggests that there also is something active, something which exerts a force, on the inside of the cylinder when the cylinder is rolling. And given what we said about the general notion of a cause this is not surprising. If causes are active and if in the case of the cylinder two causes are supposed to be involved, there should be two things involved, both of which do something or other to bring about the result that the cylinder is rolling.

The picture which we thus get so far is the following: whenever something does something or other there are at least two kinds of active causes involved, an antecedent cause which is classified as an auxiliary and proximate cause and an internal cause which is classified as a 'causa perfecta et principalis'. Though both of them can be said to bring it about that the thing does whatever it does, it really is the internal cause which by its activity is responsible for what is done.

This is not to say that whenever something happens to something, say *A*, there will be two causes involved, one antecedent and one internal to *A*. A mere passive affection of *A* does not require the activity of an internal cause. It is clear from the way Cicero sets out his examples that the antecedent causes do have an effect on the object which is not produced by an internal cause. The person who gives the cylinder a push does give the cylinder a beginning of motion, and the external sight or object does produce an impression in us (43) which is not due to an internal cause. It seems that the need for a second cause only comes in when we want to explain what the thing does, how the thing reacts as a result of being affected this way. This in turn suggests that the 'causa perfecta et principalis' is not essentially an internal cause, as we may have thought. For the 'causa perfecta et principalis' of a mere passive affection of an object will lie outside that object in the object which affects it. And this also seems to be required by what we know about 'causae perfectae' from other sources.

There seems to be no doubt that 'causa perfecta' is just Cicero's rendering of '*aition autoteles*'. We do not have a text which claims to give us the Stoic definition of this kind of cause. But we have various texts which distinguish between (i) an *autoteles aition*, (ii) a *sunaition*, and (iii) a *sunergon* ([Gal.] *Def. med.* XIX, 393 K.; Clem. *Strom.* VIII 9, 33 = *SVF* II, p. 121, 25ff.). And since we are told in various places that '*autoteles aition*' and '*sunektikon aition*' are used interchangeably (Clem. *Strom.* VIII 9, 33, 2 = *SVF* II, p. 121, 27; VIII 9, 25, 3 = *SVF* II, p. 120, 2ff.) we may also draw on texts like [Gal.] *Def. med.*, pp. 392–93) K.; S.E. *PH* III 15 and Gal. *Hist. phil.* 19 which distinguish (i) a *sunektikon aition*, (ii) a *sunaition*, and (iii) a *sunergon*. Since Sextus tells us that most

philosophers agree on this distinction, we can be reasonably certain that a consideration of these texts will get us near enough to the Stoic notions of these kinds of causes. In fact, it is almost certain that this is a basically Stoic distinction of Stoic origin. And it is also obviously the right distinction to look at in our context, since the ‘*causa adiuvens*’ with which the ‘*causa perfecta*’ is contrasted in Cicero clearly is a *sunaition* or a *sunergon*.

What, then, is the distinction? The intuitive idea behind it is fairly simple. It always must have been clear that often the question ‘Who or what is responsible for this?’ does not admit of a simple straightforward answer, because there is no single person or thing to be made responsible, but several things have to be referred to, and among them one would often want to divide the responsibility and distinguish among various degrees of it. Hence in ordinary language, but also in more technical discourse, we soon get such terms as *sunaitios*, *metaitios*, *sunergos*. If we went by ordinary usage we would guess that the Stoic distinction amounted to the following: whenever there is exactly one thing which is responsible for what happens this is the *autoteles aition*. If there are two or more things which not individually but collectively have brought about the effect, they are *sunaitia*. If something just in some way contributes to an effect, which is brought about, though, by something else, it is a *sunergon*.

The difficulties arise when it comes to the technical definitions of these kinds. For we are told of all three kinds of causes that they bring about the effect (cf. [Gal.] *Def. med.*). We are also told that the perfect cause *does* bring about the effect by itself ([Gal.] *Def. med.* XIX, 393 K;⁵ cf. ‘*suapte vi et natura*’ in Cic. *Fat.* 43.) In fact it seems to be this feature of the perfect cause to which it owes its name: ‘*autoteles*’. As Clement (*Strom.* VIII 9, 33, 2 = *SVF* II, p. 121, 27ff.) tells us: they also call it ‘*autoteles*’, since it produces the effect by itself relying on nothing else. Finally, we know from various sources (e.g., Clem. *Strom.* VIII 9, 33 = *SVF* II, p. 121, 35ff.) that *sunerga* can appear in conjunction with the perfect cause to help to produce the effect. But in this case, it seems, the perfect cause does not bring about the effect by itself; there is also a *sunergon* which can be said to bring about the effect, too. After all, this is why it, too, is called a cause of this effect.

Ultimately, the only way out of the difficulty I can see is the following: we distinguish between a strict sense of producing or bringing about an effect and a weaker sense. It is true of all three kinds of causes that they somehow bring about the effect. If there were no sense in which the impression could be said to bring about our assent and our action, and if there were no sense in which the person who pushed the cylinder could be said to have brought about the cylinder’s rolling, these items could not be said to be causes of their respective effects in the first place. But then our consideration of the cylinder case also has shown that there is a stricter, narrower sense of ‘bringing about’ in which it is not the person who gives the push, but the perfect cause which brings about the

rolling motion of the cylinder 'suapte vi et natura'. Once we make this distinction it is easy to see how we get the threefold classification. Of those things which can be said to bring about an effect in the weaker sense some also can be said to bring about an effect in the narrower sense, namely the perfect causes and the *sunaitia*, whereas in that narrow sense the *sunerga* can only be said to help to bring about the effect. But among those things which bring about an effect in the strict sense, some do bring it about by themselves, namely the perfect causes, whereas others only bring it about in conjunction and cooperation with other causes; these are the *sunaitia*.

What makes a perfect cause perfect or complete, then, is that it does not depend for its causal efficacy on the agency of some other cause outside its control. A potential *sunaition* needs another *sunaition*, a potential *sunergon* needs a perfect cause or *sunaitia* which may or may not be available. This is why the antecedent cause and hence fate by themselves do not necessitate the effect. For whether the antecedent cause does bring about the effect depends on the activity of the perfect cause, and whether the perfect cause does act is outside of the control of the antecedent cause, though it is determined.

So much for the distinction between *autotelē*, *sunaitia*, and *sunerga*. It rests on an intuitive distinction which divides responsibility. When Chrysippus says that antecedent causes are not *autotelē*, but only *sunerga*, he relies on the fact that intuitively we will understand this as meaning that it is not the antecedent cause which bears the full responsibility. At worst it is something like an accomplice. Given the technical understanding of the distinction Chrysippus' claim amounts to saying that, strictly speaking, it is not the antecedent cause at all which brings about the effect. It is something within the thing itself which produces the effect all by itself.

Given this it is easy to understand why the 'causa perfecta' would be called 'causa perfecta et principalis'. We may assume that the Greek underlying Cicero's 'For of causes some are perfect and principal . . . ' is something like this: ' . . . of causes some are *autotelē* and *kuria* (or *kuriōtata*)'. It is the perfect cause which is the cause, strictly speaking or in the strictest sense. This also seems to be brought out by the Greek names of these three kinds of causes: '*auto-teleis aition*', '*sunaition*', and '*sunergon*'. We never get the phrase '*sunergon aition*' (which also might reflect the fact that *sunerga*, as opposed to *aitia* and *sunaitia*, do not bring about the effect, strictly speaking).

Now, before we have a closer look at the nature of this perfect cause, let us briefly turn to the second kind of cause distinguished by Chrysippus according to Cicero: the auxiliary and proximate causes ('*causae adiuvantes et proximae*'). So far I have been assuming that these are the *sunerga*. But from what has been said it is clear that 'auxiliary cause' could be a translation either of '*sunergon*' or of '*sunaition*'. This ambiguity is apparent in Cicero's classification of causes in the *Topics* (58ff.), where Cicero refers to the *sunaitia* as those 'which stand

in need of help' and to the *sunerga* as 'helping' ('adiuvantia'). Nevertheless, it is clear that here we are talking about *sunerga*. For among the causes of something we can either have *sunaitia* or a perfect cause, but not both. Moreover, we know independently that it was a point of Stoic doctrine that fate, the chain of antecedent causes, only provides a *sunergon* for what things do (cf. Cic. *Top.* 58ff.). And this seems to be exactly what Chrysippus is claiming in our passage when he says that the antecedent causes which somehow constitute fate are not 'causae principiatae', but 'causae adiuuantes'.

But this raises the question how an antecedent cause can be conceived of as a *sunergon*, if a *sunergon* is the kind of item which helps to bring about the effect by making it easier for the effect to be brought about. The examples Sextus and Clement, e.g., give of a *sunergon* are of little help. If somebody lifts a heavy weight and somebody else comes along and gives a helping hand, then the second person is a *sunergon* in so far as he just helps to bring about the effect by making it easier. But the antecedent cause is precisely not the kind of thing which comes in when something is already happening anyway. It is not the case that the cylinder was rolling anyway and that the push just made the rolling easier.

Presumably the idea, rather, is that the ease with which the cylinder rolls depends on the kind of push it got. The push has to be of a sufficient size for it to be easy enough for the cylinder to roll at all, and any increment in size of the push will make the rolling easier. The difficulty about this is that, to apply generally, this presupposes some general physical theory according to which the antecedent cause contributes something to the force with which the effect is brought about by somehow intensifying that force. But that some such theory of forces and their intensification actually is presupposed seems to be clear enough from our testimonies. Cicero, as we have seen, talks about the external and the internal *vis*, ps.-Galen and Sextus characterize *sunaitia* as each exerting an equal force to bring about the result, whereas the *sunergon* is said only to contribute to a minor force. Sextus (*PH* III, 15) talks of the intensification and remission of the perfect cause and a corresponding intensity of the effect. Clement tells us that the *sunergon* helps to intensify the effect (VIII 9, 33, 7; 33, 9). In any case, we know independently that fate, i.e. the antecedent cause, is supposed to help in the production of the effect even if it is not the perfect cause (cf. Josephus *BJ* II 163⁶).

Now, the second kind of cause to be distinguished is not just characterized as a helping cause, but also as a proximate cause. 'Causa proxima' could be a rendering of '*aition proseches*', '*aition proēgoumenon*', or '*aition prokatakarktikon*'. I assume that it renders '*aition prokatakarktikon*' and that the *causae antecedentes* are the *aitia proēgoumena*.

If we take the testimony of Sextus, Clement, and others seriously the class of *sunerga* and the class of *aitia prokatakarktika* will not coincide, since not all

sunerga are antecedent causes. But there is also no evidence that the class of *aitia prokatarktika* was arrived at by further subdivision of the class of *sunerga*. This strongly suggests that the distinction of *aitia prokatarktika* is part of a division of causes quite independent of that into *autotelē*, *sunaitia*, and *sunerga*. And this seems to be confirmed by the fact that the *prokatarktika* are usually contrasted with the so-called *sunektika*, a kind of cause to which Cicero in §44 of the *De fato* refers as the 'causae continentes', and of which we know from Galen that it along with its name was introduced by the Stoics (*De causis cont.* p. 6, 2; IX 458, 11ff. K.). In fact, ps.-Galen in *Definitiones medicinales* (XIX 392) says that cause is threefold, one is the *prokatarktikon*, the other the *proēgoumenon*, and the third the *sunektikon*. And it is only after definitions of these three kinds that he turns to the distinction into *autotelē*, *sunaitia*, and *sunerga*. Possibly this threefold distinction is of Stoic origin. For Galen in *De causis continentibus* (p. 8, 8ff.) tells that Athenaeus, the founder of the pneumatic school of medicine, made this distinction and that in this he was influenced by Posidonius (8, 3ff.). He does not say, though, that Athenaeus got this distinction from Posidonius, and it is clear from our passage in Cicero that the distinction does not go back to Chrysippus, quite apart from the fact that Galen tells us elsewhere that the physicians did not get the notion of *sunektikon* straight (*Adv. Jul.*, XVIII A, 279 f. = *SVF* II, p. 122, 22ff.; *Synops. de puls.* IX 458 = *SVF* II, p. 122, 38).

If I understand the medical distinction correctly, the *prokatarktikon* is the external antecedent cause, the *proēgoumenon* is an internal disposition brought about by the *prokatarktikon* which in turn activates the *sunektikon* which is something like the perfect cause internal to the object in our Cicero passage (Galen, *De causis puls.* IX 2, 11ff.). But it is exactly this precise distinction between the last external antecedent cause and the first internal antecedent cause which is neglected in our text. For the impression, an internal antecedent cause, is put on a par with the person who gives a push, an external antecedent cause, and this in spite of the fact that the person who gives a push is also compared to the object which brings about the impression. So in Chrysippus we obviously only have the distinction between the *sunektikon* and the *prokatarktikon*. But it is also clear that given the importance of the external-internal distinction for Chrysippus' causal theory the trichotomy easily comes to mind.

Roughly, it seems to me, the two divisions of kinds of causes are related in this way: perfect causes and synhctic causes coincide; *sunerga* may or may not be antecedent causes, but antecedent causes are *sunerga*. Given that antecedent causes and *sunerga* do not coincide, whereas perfect and synhctic causes do, it is not surprising that we sometimes find a list of four kinds of causes: perfect or synhctic causes, *sunaitia*, *sunerga*, and antecedent causes (cf. Clem. *Strom.* VIII 9, 31, 7; ps.-Galen, *Hist. phil.* 19, p. 611, 9ff. Diels). Sextus indicates one specific way in which we may arrive at such a list, namely when we distinguish

between kinds of causes which are or can be simultaneous with their effects from those which are not or cannot be simultaneous (*PH* III 15–16). But this raises another set of problems which I shall not go into here.

Let us, then, consider in detail the distinction between *sunektika* and *prokatartika*. Though a distinction under these terms was very widespread, though we have many testimonies for it, and though we still have at least translations of monographs by Galen on each of the two kinds of causes, the Stoic doctrine on the matter is far from clear. There are even doubts as to the explanation of the terms '*prokatartikon*'⁷ and '*sunektikon*'.

As to the term '*sunektikon*' Galen tells us in various places that it was the Stoics who introduced the notion and the name '*sunektikon aition*' (*Synops. de puls.* IX 458, 11ff. K. = *SVF* II, p. 122, 38ff.; *De causis cont.* p. 6, 2ff.; *Adv. Jul.* 6 XVIII A, 279, 13ff. K. = *SVF* II, p. 122, 21ff.). And he also repeatedly tells us that this notion is misunderstood and misused by physicians (cf. the passages mentioned above). What they fail to take note of is that for the Stoics a *sunektikon* is not just a cause of an activity like walking, but the cause of the being of something. And from Galen's *De causis continentibus* and other sources we learn how this is supposed to be so. There is some fine active substance, a mixture of fire and air, the so-called pneuma which pervades every object, holds its parts together, and thus provides it with unity and form and becomes the cause of the being of the thing. In fact it is the Stoic analogue of an Aristotelian form; in animals it is the soul, in human beings it is an intellectual soul. Since it is a primary function of the *sunektikon* to hold together the thing it is the form of, it seems safe to assume that it is this function to which the *sunektikon* originally owes its name. But it also seems to be this very same *sunektikon* which is not just the cause of the being of something, but also of its behavior.

To explain this in a sense should be no more difficult than to explain how a form, e.g. a soul, accounts both for the being of something and for its behavior. The explanation would proceed along the same lines. If anything, it should be easier to explain how the pneuma satisfies both functions, since in this case it is a body which makes a body exhibit a certain behavior. Presumably the pneuma admits of being put into different states and with increasing complexity there will be an increasing number of ranges of such states. Some of these states will be 'active states' such that being in those states the pneuma will act in a certain way. Whether a state is active and how precisely the pneuma will act in such a state will depend on the precise nature of the pneuma, the modifications it has undergone, the dispositions it has acquired, and the other states it is in.

We could, e.g., try to imagine that the pneuma is characterized by a complex set of interdependent tensions in some more or less comfortable equilibrium such that, if certain of these tensions are intensified to a certain degree, we have an active state of the pneuma and a certain kind of action results. Moreover, we might imagine that, if an object is affected, one or more of these tensions are

affected and hence, as a result, the whole system of tensions is affected. So we might imagine that if an animal receives a certain impression at least one of these tensions gets intensified. If the whole system of tensions is such that as a result an action producing tension gets sufficiently intensified, this action would be due to the whole system of tensions, but it still might be thought to be literally true that the impression, or more generally the antecedent cause, had contributed some of the force with which the action was executed, insofar as the increased force of the intensified action producing tension in part was the force of the tension intensified by the impression.

But whatever the mechanics of the *aition sunektikon* may have been supposed to be it is clear that most people would not have subscribed to the physical theory underlying it. They might, e.g., deny that the primary active cause for a thing's behavior was to be found in the thing itself. Even if they accepted the view that the *pneuma* played an important role in the explanation of the behavior of things, they might not, as e.g. Galen did not, accept the view that such a *pneuma* was needed to account for the existence of objects as that which holds them together (cf. *De causis cont.* VI and VII). Nevertheless, they might want to have some kind of cause which on their physical theory in some way or other plays a role analogous to that of the *sunektikon aition* and which they hence would call by the same name. And in this case it would be clear that the name could no longer be interpreted as referring to the fact that this kind of cause is that which holds the object affected together.

And, as a matter of fact, we do find all sorts of non-Stoic uses of '*sunektikon aition*'. One of them, in Cicero's *De fato* 44, seems to have puzzled editors and commentators no end. Von Arnim, e.g., prints a text (*SVF* II, p. 283, 34ff.) which makes Chrysippus concede that the antecedent cause is the *sunektikon*, i.e. the perfect cause. Cicero refers to a doctrine according to which the proximate and containing cause ('*proxima illa et continens causa*') would be the impression, if somebody gave assent to it. It is clear that here the *causa continens* is the *aition sunektikon*. But it is equally clear that this term now is not used in the Stoic sense. For the Stoics specifically deny that the antecedent cause is the containing cause. Moreover, the position Cicero describes envisages the possibility that the impression, though it is the containing cause of the assent, also might not have brought about the assent (I take it that the subjunctive of 'moveat' is not just the subjunctive of indirect speech). This again, as we shall see shortly, seems to be incompatible with the Stoic notion of a containing cause. Hence it is not surprising that Cicero should go on to say: "Chrysippus will not admit that the proximate and containing cause of the assent lies in the impression and hence he will also not admit that this cause, i.e. the impression, necessitates the assent."

Cicero's remarks in *De fato* 44 very much suggest that Chrysippus thought that if something were the containing cause of something it would necessitate

its effect. And this I actually take to be Chrysippus' view. But in what sense could the containing cause be thought to necessitate its effect? In this connection it is presumably relevant to refer to Stobaeus' characterization of Zeno's notion of a cause (*Ecl.* I, p. 138, 14ff. W). According to Zeno a cause is such that its presence necessitates the effect. And this principle is illustrated by the following examples: it is wisdom which brings about being wise, the soul which brings about living. This reminds one not just of the unreformed giants of Plato's *Sophist* (247^bff.), with whom the Stoics were very much in sympathy (cf. *SVF* II, p. 123, 16ff. = *Soph.* 246^aff.), but also of Socrates' safe causal accounts in the *Phaedo* and Aristotle's formal causes.

The connection between wisdom and being wise and soul and being alive might seem to be trivially necessary insofar as it just is with reference to somebody's wisdom that we call him wise. But this cannot be what Zeno has in mind, for he seems to think of somebody's being wise as an effect produced by wisdom, as if one's wisdom invariably and necessarily brought it about that one is wise. Perhaps the idea is the following. It is true that our common notion of wisdom does not tell us how it is that wisdom makes somebody wise. But if we had a complete technical understanding of what wisdom really is, then we would also understand that wisdom by its very nature brings it about that those who possess it invariably are wise. Looked at in this way the necessity involved still can be regarded as some kind of conceptual necessity. (This is not to attribute to the Stoics a distinction between logical or conceptual and physical or empirical necessity.) Given the correct complete technical notion of wisdom which reflects its nature in all detail, one sees how wisdom cannot fail to produce its characteristic effect. It may be along these lines that the Stoics think that the containing cause necessitates its effects. If one understands the nature of a soul as characterized by wisdom, one sees that it cannot fail to produce the effect that somebody is wise. In this case the necessity involved would just be the necessity which characterizes a Chrysippean conditional whose consequent is the statement that the person is wise and whose antecedent is the relevant truth about his soul.

This brings us back to explanation. To simplify matters let us concentrate on cases in which something does something or other, exhibits a certain piece of behavior. The Stoics assume and argue that nothing happens without a cause. More specifically, they assume that nothing happens without an antecedent cause and argue, e.g., that if things happened without antecedent causes the continuity of the universe would be interrupted. But they also assume that a reference to the antecedent cause is not going to explain why something does something or other. To explain this we have to refer to the *sunektikon*, and we do not have to refer to anything else. For a truth about the *sunektikon* will entail the truth about the object to be explained, whereas no truth about the antecedent cause by itself will be the antecedent of a true Chrysippean conditional with the fact to be explained as the consequent.

These conditionals will be instantiations of universal conditionals of the form 'if the *sunektikon* of x is such-and-such then x is (or does) so-and-so'. We may assume that it is sets of such conditionals which specify the nature of each kind of *sunektikon*, and hence it would be natural to arrange these conditionals according to the kinds of *sunektika*. Since these conditionals are universal and since they can be of any degree of generality, we can also draw on them for general explanations.

Now these conditionals will cover what happens within the thing, so to speak. They tell us how a thing, given its kind of nature, the modification of its nature and the states it is in, will behave. But, though this in some sense gives us a complete explanation of what the thing does—for otherwise the corresponding conditional would not be true—we shall think that we are missing something if we do not get the antecedent cause into the picture. After all, the thing would not have done what we are trying to explain if there had not been an antecedent cause which in some sense had brought it about that the thing would behave in a certain way. In fact, we are very much tempted to think that the real explanation of what the thing did would be in terms of what the antecedent cause did and some general law which connects what the antecedent cause does with what the object does. And it seems clear that our conditionals do not provide us with such laws. According to Cicero's *De fato* it seems that Chrysippus claims that there can be no true conditionals which connect truths about antecedent causes with facts they are the antecedent causes of. Nevertheless, it seems that for the purpose of explanation we shall not need general laws in addition to the conditionals which we already have.

It is true that for other purposes, e.g. divination and prediction, we might want to formulate such general laws. Given his views on cosmic sympathy Chrysippus is not going to deny that events do not occur in isolation of each other, in fact he is going to stress that there is a connection between any two things that happen. He also is not going to deny that by observation we could detect regularities, constant conjunctions, and that it would be worthwhile to formulate and collect corresponding rules or laws for prediction. But he does deny that such rules as 'if somebody is born at the rise of the Dog-star he will die at sea' offer any explanation for somebody's death at sea even if the person was born at the rise of the Dog-star and there in fact is a constant conjunction. For in spite of the fact that he believes in divination in general and does not object to astrological rules as such, he rejects their formulation as conditionals (cf. Cic. *Fat.* 15). And the reason for this would seem to be that the antecedents of such rules established by observation do not amount to a sufficient reason for their consequents, that they do not necessitate the consequent in the way in which the principal, but not the antecedent, cause necessitates its effect, even though it invariably may be accompanied by its consequent, and that the antecedents thus do not provide us with an explanation of the consequent. The question, then, is

how we can restrict ourselves to Chrysippean conditionals and nevertheless do justice to the role of antecedent causes.

To see how this perhaps could be done we have to take into account that though the antecedent cause is only the antecedent cause of what the object does, it at the same time is the perfect cause of the state of the *sunektikon* which thus affected makes the object do what it does. Though this will hardly do as it stands, we now can look for an explanation along the following lines: we assume that all antecedent causes are antecedent causes of something *p* by being *sunektika* for a *sunektikon* *s* of a passive affection *q* such that a *sunektikon* *s* in state *q* is a perfect cause of *p*. In this case it would turn out that the relation between the antecedent cause and the effect can be analyzed into at least two relations, each of them between a perfect cause and its effect and hence each of them covered by the laws for containing causes.

So it does seem that the theory of causes, in spite of their restriction to active cause, is after all constructed in such a way that we can fully account for any particular fact in terms of these causes. The fact to be explained can be seen and understood as following with necessity from some truth about the cause once we understand the nature of the *sunektikon* involved in its relevant detail. This nature will be spelled out by universal conditionals which are, so to speak, the laws of their particular nature.

That in this way we account for everything in terms of the nature of the thing involved does not as such seem objectionable. For we ourselves might think that ultimately everything has to be accounted for in terms of its nature. We might, e.g., think that there is just one nature, that of an extended body, say, and that the laws of nature amounted just to the specification of that one nature such that if one really knew what an extended body is one would know and understand that to be an extended body was precisely to satisfy these laws. That according to the Stoics we do have a plurality of natures is an inconvenience with which we may have to live anyway. That the Stoics also assume individual natures, though, will create serious problems. That they themselves do not seem to do anything which could count at least as a start of an attempt to specify these hidden causes, in fact rather shy away from it, does raise further questions.

Nevertheless, the Stoic theory of causes may have had a considerable positive effect on actual physical explanation, after all. For, worked out in detail, it presupposes that if an object acts on another object so as to make it react in some way it does so by imparting a force or power to it; there is a transfer of force, an influence into the object affected. For the theory of motion in particular it suggests, as we saw in the case of the rolling cylinder, that we have to work with the notion of an internal force which keeps the body moving and the notion of a force imparted to a body which gets the body moving or increases its motion. It is difficult not to suspect that this may be the ultimate source of Philoponus' theory of imparted forces. It is well known that Philoponus in his discussion of

the Aristotelian theory of motion took the position that the motion of a body is caused by an internal force which may be imparted and that it is such an imparted force, rather than the medium, e.g., which accounts for the motion of projectiles. Thus Philoponus has gained a place of honor in the history of science. But in spite of the useful suggestions by Pines, Wolff and G.E.R. Lloyd,⁸ we know little about the historical antecedents of Philoponus' theory of motion. And what tends to be overlooked in this connection is the considerable influence Stoicism had on Philoponus' physics. Hence it does not seem far-fetched at all to suggest that Philoponus' theory of motion has its ultimate origin in the Stoic theory we have been considering. In this case the Stoic theory of causes would not just have had a deep and lasting influence on the history of the notion of cause, it also would have made considerable contribution to science.