Problems and Possibilities in the Translation of the Classics

(A Critical Approach to Aristotle, \textit{Metaphysics} Alpha 1-2; \textit{Physics} Beta 1-9.)

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Senior Honors Colloquium
November 1990
Translator's Preface

So why a new translation of Aristotle? Considering the great number of English renderings already extant, one wonders whether the question most translators put to themselves is not rather, "Why not a new translation?" As unscholarly as such a flippant attitude may seem, I would not discourage it; for the phrase "definitive translation" is as fanciful as any bandied about in academic circles. A new translation of any work, even if it is produced on a whim, is almost certain to be superior, in at least one respect, to the best translation preceding it. That superiority may lurk in a single word, or hinge on the division of a paragraph. It is the height of folly to think that a Lattimore or a Fitzgerald cannot be improved upon. Homer is doubtless an improvement on both. There is always a rift in quality between a great literary work and any given translation of it. And though the walls on either side of that rift can never be made flush, the distance between them can always be narrowed. But even if an ambitious high school student with a little Greek under his belt were to translate the entire Iliad without improving upon Lattimore's version in the slightest detail, his work would not have been in vain: At the very least, he would have honed his translating skill for later projects.
And what harm would he have done? The best thing about bad translations is that they can be ignored.

But I do not mean to give the impression that my translation is the result of a whim or of juvenile ambition. I believe that it has merits which others lack. Because of its relatively small scope, for instance, I have been able to translate individual words on a more consistent basis than, say, W. D. Ross, who translated and edited Aristotelian texts on a grander scale than anyone before him or since. Indeed, perhaps my most significant advantage over Ross is my access to his translations. I am able to work from the very thing he worked toward. Because I can start from the point where he finished, I need be neither as dedicated nor as talented as he was—-I need only move in the right direction.

And I believe I have done so. To take an example from the first sentence of my translation, I am confident that since eido is the perfect form of oida ("I see"), my rendering of eidenai as "to have insight" is superior to Ross' "to know." (As my many notes will explain how and why I have deviated from Ross' word choices, it would be superfluous for me to cite further examples here.)

I mentioned earlier that I look upon the consistent terminology of my translation as one of its strengths. But there are many scholars who do not believe that word-to-word correspondence between text and translation is worth the translator's sweat, or that it is even desirable. They object,
quite rightly, that it is easy for the translator obsessed with consistency to get all the words right while producing a translation that is distorted at best and unintelligible at worst. Of course, I agree that a farrago of words translated one at a time without regard for sense is useless. Who wouldn’t? But even the most liberal translators, whether they like it or not, must admit that consistent terminology plays a role of some importance in translation. Suppose a translator of the *Aeneid* rendered *pietas* variously as "piety," "devotion," "filial respect," and "loyalty," according to metrical constraints or simply because, to trace his own thoughts, he was "concerned with conveying the sense of the text, and not with the words themselves." With Kant, I would hasten to point out to such a translator that "there is really no art in being generally comprehensible if one thereby renounces all basic insight" (*Foundations of the Metaphysics of Morals* /Macmillan/1959/p.26). And few would deny that it would be difficult for a reader of the *Aeneid* to have much insight into it without an appreciation of the importance Vergil attaches to the single, recurring word, *pietas*.

However, the debate over the importance of word-to-word correspondence in translation has raged too long for me to resolve it in this little preface. So I must offer something more than consistent terminology to the scholars who scoff at it in order for them to take my translation seriously. To such scholars I offer my ignorance.
Most Aristotelian scholars study—and form opinions about—Aristotle's works for years before they ever take up the translator's pen. And though most do a remarkable job of suppressing the semi-conscious, semi-natural desire to make fast an idiosyncratic interpretation of his work as they render it into English, there are ambiguous passages in the Greek text whose ambiguities most translators fail to preserve in their renderings. Often without even being aware that they are doing so, translators ignore (or even fail to perceive) the possible interpretations of an ambiguous passage which do not conform to their own preconceived notions, notions which may be sound, but about whose soundness it is hard to be certain. One of my chief virtues as a translator of Aristotle is my very ignorance concerning him. As I have no preconceived notions about the Physics, I cannot very well render that book's ambiguous passages so as to conform to such notions. My objective is to choose the rendering that the text itself seems most to indicate as the correct one. But suppose the text is deceptive; suppose I make the wrong decision. After all, who am I, a mere undergraduate, to make such decisions about Aristotle? I am no one. So let us assume that I will be wrong in my judgment call about every ambiguity. At least I err out of ignorance and not to propagate my own opinion. And because I have an honest desire to avoid such honest mistakes, and to keep their damage to a minimum, I provide, in my extensive notes, alternative interpretations of each ambiguous passage. Such annotation is not to be found in
most other translations because the translators are, for the most part, sincerely unaware that such alternative translations are reasonable.

It is regrettable that notes are generally tiresome to the degree that they are extensive—but not so regrettable. After all, I can always hope that my notes will disgust a few of my readers into learning Greek. However, I am quick to add that while I grant the importance of reading a great book in its native tongue, I assert the urgency of reading it in some tongue. And it is my hope that what follows will be adequate for the purposes of the majority of readers who have no time to learn Greek, and who, unfortunately, must either rely on translators—all too fallible translators—or completely miss the opportunity to acquaint themselves with Aristotle.

M. D.
## Contents

From Book Alpha of the *Metaphysics*:

<table>
<thead>
<tr>
<th>Alpha 1</th>
<th>2</th>
</tr>
</thead>
<tbody>
<tr>
<td>Alpha 2</td>
<td>12</td>
</tr>
</tbody>
</table>

Book Beta of the *Physics*:

<table>
<thead>
<tr>
<th>Beta 1</th>
<th>20</th>
</tr>
</thead>
<tbody>
<tr>
<td>Beta 2</td>
<td>30</td>
</tr>
<tr>
<td>Beta 3</td>
<td>40</td>
</tr>
<tr>
<td>Beta 4</td>
<td>54</td>
</tr>
<tr>
<td>Beta 5</td>
<td>62</td>
</tr>
<tr>
<td>Beta 6</td>
<td>72</td>
</tr>
<tr>
<td>Beta 7</td>
<td>80</td>
</tr>
<tr>
<td>Beta 8</td>
<td>86</td>
</tr>
<tr>
<td>Beta 9</td>
<td>100</td>
</tr>
</tbody>
</table>

Bibliography .................................................. 106
By nature, all men yearn for insight.¹ And a sign of this is the delight derived from the senses; for even apart from their usefulness, they are loved for themselves; and far above the others, the sense of sight. For not only in order that² we may act, but even when we intend to do nothing, we prefer seeing (so to speak) to everything else. The reason is that [sight] makes us know the most of all the senses, and makes many distinctions clear.

Now, animals are by nature born with sensation; and through sensation memory comes to some of them, but it does not come to others. And because of [memory], these [animals] are more prudent and teachable than those which are unable to remember; and those which are unable to hear sounds are prudent but are without learning (such as the bee and any other similar race³ of animals). But those which have this sense of hearing in addition to memory can learn.

The other animals live by imaginings and memories, and share
I render eidenai as "to have insight" because this rendering preserves the connection between seeing and knowing which the Greek term suggests. Eidoo, the first person singular form, is really the perfect form of oida, which means simply that the Greeks often used "I have seen" for "I know," presumably because one knows after one has seen. It is to preserve this delicate relationship between the words that I prefer "to have insight" to Ross' "to know" and to Apostle's "understanding."

Another important word in this very important first sentence is phusei, the dative form of phusis, the word from which the title of this book is, in part, derived. In the Greek text, it occurs at the end of the sentence, a position often reserved for words of importance. But because, in English, we usually put our most important terms near the beginning of the sentence, I have taken the liberty of starting off my translation by rendering phusei.

"In order that" is a more common, though less colorful translation of hina than Ross' "with a view to." Usually, such coloration is perfectly excusable. But in this sentence, which deals specifically with the sense of sight, the use of "view" is unwarranted in that it could lead to some nasty eisegesis.

Though I am extremely tempted by Apostle's rendering of genos as "species," I follow Ross and Barnes in using "race," primarily because Aristotle would almost certainly have used eidos if "species" had been what he had in mind. The compromise translation, "genus," would, of course, be redundant next to "similar," which I could not bring myself to delete.
little in experience, but mankind lives also by art and reasoning. And from memory experience comes to men. For many memories of the same thing finally result in the capacity for one experience. And experience seems nearly to be the same sort of thing as science and art, but science and art come to man from experience. For "experience made art," as Polus says, "but inexperience luck."  

Now art comes into being when out of many notions from experience, one universal judgment comes to be concerning similar things. For to have the judgment that such-and-such a [remedy] was beneficial to Callias when he was ill with such-and-such a disease and [that it was] similarly [beneficial] to Socrates and to many individuals is a matter of experience; but to determine
*technee*

I follow the spirit of most translators by rendering *mias emperias* as "one experience." But Hope offers the fascinating alternative of "unified experience," which differs more from my rendering than it may at first appear. The text seems to me to suggest the particular meaning more than Hope's general one, but I mention his interpretation as a very distinct possibility.

*episteemeee*

The word play in Greek between *techneen* ("art") and *tucheen* ("luck" here, but "chance" elsewhere) is lost in English. But it is important to note that even though "luck" seems a better rendering of *tucheen* than "chance" in this context, *tucheen* is probably used in this weaker sense precisely in order to preserve the word play in this sentence.

Though I don't know that any limit has been set on the number of interpolations a translator is allowed in one sentence, I suspect that a consensus would say that three is definitely too many. But I feel that my approach is the best for avoiding unnecessary ambiguity. For instance, Ross offers "For to have a judgment that when Callias was ill of this disease this did him good," from which a possible inference is that the disease itself did Callias good. And the reader who has Theages--Socrates' example of the man who benefits philosophically from sickness (496 b-c)--in mind, this interpretation is the most likely one to be adopted. As this interpretation is not at all supported by the context, I have tried to avoid this ambiguity through an ample, though necessary, sprinkling of interpolations.
that it is beneficial to all people of this type\(^9\) (such as the
phlegmatic or bilious people burning with fever)—this is a
matter of art.

Experience in no way seems to differ from art with respect
to actions, but in fact men of experience succeed rather than
those having reason without experience (and this is because\(^10\)
experience is knowledge of individual things, but art is
knowledge of universals, while actions and productions are all
about individual things; for the physician does not heal Man,
except incidentally, but [rather] Callias or Socrates or some
other called [by some such individual name] who happens to be\(^11\) a
man; so if ever a man should have reason without experience and
should he know the universal but be ignorant of the individual
thing within this, he will often fail to cure; for one must cure
It seems impossible to render *eidos* as any particular English word on a consistent basis. I have already mentioned that Aristotle might, at times, have used it to mean "species," but here translate it as "type." Because of its obvious relationship to *eidenai*, perhaps the best rendering is "look," as in "the look of a table" (meaning its form). "Form" often seems better in context, but rings so clearly with Platonic overtones (which Aristotle comes just shy of ridiculing in the *Physics*) that I feel it is best to avoid that word except in the passages in which Aristotle is obviously alluding to Plato. In one instance, for obvious idiomatic reasons, "kind" is the only rendering that will do. It is unfortunate that this, perhaps the single most important word in the selections I am translating, should be so troublesome. As a rule, however, I may be counted upon to use "look" and to note any deviations from that standard rendering.

*Aition*, which I usually render as "cause" or "reason" (according to context) is here rendered as "because" so as to avoid needless repetition of "reason," which is my translation of *logon* a few words previous.

Though I would like to use "coincidentally is" rather than "happens to be," the whole force of Aristotle's example lies in its simplicity. Such an awkward rendering of *sumebeekos* as "coincidentally is" would make the argument so much less pointed that I am compelled to deviate here from the rendering I will use as a standard in the *Physics*. 
on an individual basis). But nevertheless, we think insight and understanding to spring from art rather than from experience, and we suppose artisans to be wiser than men of experience, so that wisdom rather follows in each case from insight; and this is because the artisans know the cause, but the men of experience do not.

For the men of experience know that the thing is so, but do not know why, while the others know the "why" and the cause. Therefore, we also think the master-artisans in each craft more honorable, more insightful, and wiser than the manual artisans because they know the causes of the things being done; but we think the manual artisans to be just like certain soulless things which act, but do so without knowing what they do, as fire burns--but while the soulless things perform each of their functions by a certain nature, the manual artisans do so through habit. Thus we do not think of the master-artisans as being wiser because of their being able to act, but because of their having reason as well as their knowing the causes. And in general, the ability to teach is the sign of when one has insight and when one does not, and because of this we consider art to be science more than experience is. For artisans can teach, but men of experience cannot.

Again, we do not consider any of the senses to be wisdom, although these are most authoritative in examining individual things. But they do not tell the "why" of anything, such as why fire is hot, but only that it is hot. It is likely that the first man who discovered any art whatsoever outside the common
I translate *epaiein* as "understanding." It is worth noting that though this verb is not the perfect form of "to hear," its primary meaning is "to hear, feel, or perceive," thus providing us with a second knowledge-word which is intimately related to the senses.

Having run out of distinct knowledge-words in English, I render *iseemi* and its forms as "know." These forms play a prominent role in this chapter, but drop out in A.2, where I use "know" for *gignooskoo*. 
perceptions was admired by men, not only because of being useful, but as a wise man and one superior to others. But as more arts were discovered, and some were directed to the necessities, others to recreation, the inventors of the latter were always regarded as wiser because of their not directing their science to utility. Hence, when all such things were already developed, the sciences directed towards neither pleasure nor the necessities were discovered, and [these discoveries were made] first in those places where men first began to have leisure. This is why the mathematical arts were founded in Egypt, for there the priestly class was allowed to be at leisure.

The difference between art and science and other kindred faculties has been mentioned in the Ethics; but the point of our discussion is this: that all men suppose what is called wisdom to concern the first causes and principles, so that, just as it has been said before, the man of experience seems to be wiser than those having any sense perception whatsoever, and the artisan wiser than the men of experience, the master-artisan than the manual artisan, and the speculative sciences seem to be wisdom to a higher degree than the productive. Clearly, then, wisdom is knowledge concerning certain principles and causes.
14I am at a loss to account for Ross' insertion of "naturally" before "always," since I can find nothing resembling the term fusis in this sentence. Because fusis is one of the most important terms in this book, it is rather puzzling that a scholar of Ross' calibur should have allowed it to creep into a passage to which it doesn't belong so unwarrantedly. Barnes, perhaps as confused by this superfluous word as I am, omits it, though perhaps "omit" is the wrong term to use in conjunction with a word that never should have been there in the first place.

15"Speculative sciences" or "theoretical sciences" seem the best renderings available for theoreetikai. I have chosen the former over the latter (with its obvious etymological ties to the Greek term) because by using "speculative," which probably has a less fixed meaning in the mind of the average English reader than "theoretical," I expect to make it easier for the layman to follow Aristotle's range of meanings for this word.

18archas
And since we are seeking this science, we must consider what kinds of causes and what kinds of principles the science which is wisdom would concern. Indeed, if one were go over the notions we have concerning the wise man, perhaps this science would become more evident.¹ Well, first we suppose all things to be understood by the wise man as far as possible, without having a science² of individual things. Second, we suppose the wise man is able to know the difficult things, not the easy things for man to know (for perception is common to all; therefore it is easy and in no way wisdom). Third, we suppose the one who is more accurate and better at teaching the causes to be wiser concerning every science.³ And fourth, of the sciences also, we suppose the one being desired for its own sake and for insight to be wisdom rather than the one desired for the sake of its results; and we further suppose that the commanding science is wisdom more than the subservient science, for the wise man must not be ordered but must order, and he is not to be obedient to another, but the less wise are to obey him.⁴

Such, then, and so many are the notions we have concerning wisdom and the wise. And of these, it is necessary for the understanding of all things to belong to the person most having the universal science (for, in a sense, he has insight into all
I follow Apostle in rendering *laboi* (literally, "take") as "go over" in order to make this sentence somewhat easier for the layman.

Even Apostle (who usually uses "science") renders *episteemee* in this sentence as "knowledge," which is quite understandable. Perhaps Taylor's solution, "scientific knowledge," is best here. But I do not feel that the awkwardness of "science" as compared to, say, "knowledge," is significant enough to merit a change in translation.

I follow Ross and Barnes in taking *didaskalikoo* *toon aitioon sofoo* *toon eina* *episteemeen* to mean something like "[he who is] better at teaching the causes is wiser about every science," though there is something to be said for Apostle's slightly, though importantly, different interpretation: "[he who is] more able to teach the causes in each science is wiser." Hope offers the less tenable "he who is . . . more able to teach the reasons why is the wiser in his particular science," while MacMahon suggests a reversal of signifier and signified by offering this: "... in every branch of knowledge the wiser a man is, the better [he is] able to teach the causes of things."

*Hupeereetees* is more closely related to subservience than to inferiority, and it is because of this relationship (and in order to preserve the obvious antagonism of the Greek text) that I translate *archikoo* *to* *on* as "commanding" rather than superior, thus deviating in word choice from Ross, Barnes, and Apostle.
the underlying things). And these, the most universal things, are on the whole the most difficult for men to know, for they are farthest from the senses. And the most exact of the sciences are those mostly concerned with first things, for those of fewer assumptions are more accurate than those of additional assumptions, as arithmetic is more accurate than geometry. But truly, the speculative science of causes is also more instructive; for the people who instruct are those who tell the causes of each thing. And insight and understanding of things for their own sake most belong to the science which is most understandable (for the one choosing understanding for its own sake will most probably choose the best science, and such is the science which is most understandable); and the first things and causes are the most understandable (for because of these things and from these things other things are known, but not these because of the underlying things). And the most commanding science, more truly commanding than the subservient ones, is the one knowing for the sake of what each certain thing must be done; and this is the good of each thing, and, in general, the best thing in the whole of nature. So, from all the things having been said, the name being sought falls to the same science, for this must be the speculative science of first principles and causes; for the good (also being that for the sake of which something is), is one of the causes.

And that it is not a productive science is clear even from the first philosophers. For it is because of wonderment that men now begin and at first began to philosophize. They wondered from
This sentence clearly brings out the relationship—etymological as well as conceptual—between epistasthai ("understanding") and episteemee ("science" or "knowledge"). I have been unable to come up with suitable English renderings for these words which preserve the etymological parallel.

6I follow Hope and Taylor in rendering legomenoon as "assumptions" (rather than using Ross' "principles") in order to preserve "principle" for archee.

7MacMahon construes tou malista episteetou as "that which is best to know" rather than as (to quote Ross) "that which is most knowable."

8I use "know" for gignooskoo and its derivatives.

9I follow Taylor's liberal rendering of kai as "more truly."

10Ross is confident enough about his Aristotelian competence to reduce this complex parenthetical remark to "the end," a reduction which seems perfectly justified. But I am no more willing than Barnes to make this interpretive leap, small though it may be, even though Apostle offers "final cause."

11"Productive science" is, I believe, the least inadequate rendering available for poieetikee, even though episteemee is not a part of the word.
the first about the difficulties close at hand. Then, having advanced little by little, they were perplexed by greater matters—about the phases of the moon as well as the sun and the stars and about the genesis of everything. And a man who is perplexed and wonders thinks himself ignorant (whence a lover of myth is somehow a lover of wisdom; for the myth is composed of wonders); so that just as if they were fleeing ignorance through philosophizing, it is evident that they were pursuing science for insight and not for the sake of some utility. And the way things turned out attests to this. For it was when nearly all the necessities in addition to the things of leisure and recreation had come into being that such knowledge began to be sought. Clearly, then, we are not seeking this [science] because of any other advantage; but just as we say a man is free who exists for his own sake and not for another's, so also this alone of the sciences is free; for it alone exists for itself.

Therefore, the human acquisition of this science might justly not be expected as a possibility; for the nature of human beings is enslaved in many ways, so that according to Simonides, "God alone should have this privilege," and a man is unworthy in not seeking the science suited to him. If indeed there is something to what the poets say, and it is natural for the Divine to be jealous, [then Divine jealousy] is most likely to result over this [science] and all those excelling in it would be unfortunate. But neither is it permitted for the Divine to be jealous—nay, according to the proverb, "bards tell many a lie"—nor is it proper to think of another science as more honorable
12 I wish to point out that I deviate here from my usual rendering of archee as "principle," using the traditional "from the first" for the phrase ex archees.

13 It seemed more important to me (as to Ross) to preserve the word play between philomuthos and philosophos than to cling to the obvious rendering of philosophos. (Attempts to get across the word play with "philomyther" proved unsuccessful with my proofreaders.)

14 Despite the importance of the term sumbebeekos, my liberal rendering, "the way things turned out," is pretty well dictated by context here.
than one of this sort. For the most divine thing is also the most honorable, and a science could only be so in two ways. If it were the science which would be best for God or if it were a science of divine things, it would be a divine science. And this science alone happens to be both of these, for God seems to everyone to be both among the causes and to be a certain principle, and such a science either God alone would have or God most of all. So, all things are more necessary than this, but none is better.

However, in some sense, the acquisition of this science must put us in a position contrary to the things sought from the beginning. For all begin, just as we said, by wondering that things are as they are, as they wonder about automatons or about the solstices or the incommensurability of the diagonal [of a square with its sides]; for all those not having comprehended the cause seem to wonder that something cannot be measured by the smallest unit. But we must end in the contrary—and, according to the proverb, the better—state, as also in these instances when men learn the cause; for the geometer would wonder at nothing more than if the diagonal were to come out as commensurable [with the sides of a square].

It has been stated, then, what is the nature of the science being sought and what is the mark which the search and the whole investigation must hit upon.
This is the first sentence of the most troublesome passage in this chapter. My rendering is closer to MacMahon's than to anyone else's, but I am not comfortable enough with it to forego listing some other options.

Apostle: "For the most divine science is the most honorable, and a science would be most divine in only two ways: if God above all would have it, or if it were a science of divine objects. This science alone happens to be divine in both ways. . . "

Ross: "... honorable; and this science alone must be, in two ways, most divine. For the science which it would be most meet for God to have is a divine science, and so is any science that deals with divine objects; and this science alone has both these qualities. . . "

Hope: "For the most divine knowledge is also most worthy of honor. This science alone may be divine, and in a double sense: for a science which God would most appropriately have is divine among the sciences; and one whose object is divine, if such there be, is likewise divine. Now our science has precisely these two aspects. . . "

Again, I use "from the beginning" for ex archees. In the following sentence, "they begin" is from archontai.

tetheoreekosi
Of the things that are, some exist by nature, others through other causes. Animals and their parts exist by nature, as well as plants and the simple bodies, that is to say earth and fire and air and water (for we say that these and other such things exist by nature). And all these aforementioned things are apparently different from the things not having been framed by nature. For, by nature, each of these things appears to have a principle of motion and of stillness, some according to places, others according to growth and decay, and still others according to alteration. But a bed, or a garment, or anything else of that sort, insofar as each comes by chance under a classification and exists by art—-not one has a natural impulse
1I render *sunestoota* as "framed" here because it so delicately suggests the connection between nature and art (and because "framed" is a perfectly legitimate rendering). Ross, Barnes, and Charlton use "constituted"; Apostle uses "composed."

2I use "motion" and "stillness" for *kineeseoos* and *staseoos*, following Ross' spirit. But Charlton, considering the implications of Aristotle's thought, goes an extra step, offering *kineeseoos* as "change" and *staseoos* as "staying unchanged," a step which is small and well justified, but a step which I prefer to allow Aristotle to take for himself later in the text—in case there is a reason behind his timing.

3I use "alteration" for *alloioosin* and "change" for *metabolees*.

4In A.1 of the *Metaphysics*, I rendered *genos* as "race," a word which would be completely out of place here; "sort" seems the least loathsome of alternatives in this context, but I use it hesitantly. If we take *genos* to mean "descent," then the meaning of the first part of the sentence would be as follows: "But a bed, or a garment, or anything else of [manmade] origin..." The fact that this interpretation would result in a pleonasm does not, in itself, make it any less plausible, as most readers of Aristotle know only too well.
towards change; but insofar as these consist coincidentally of stone or earth or a composite of these—and only to such an extent—do they have such an impulse. So nature is a principle and cause of the movement and rest by which something begins to subsist of its own accord primarily and not coincidentally. And I say "not coincidentally" because a doctor might cause his own health. But nevertheless, it is not because of his being healed that he has the medical art, but the doctor is coincidentally the one being healed. And for this reason, the one is sometimes separated from the other.

And similarly with each of the other things which are made. For none of them has in itself the principle of its making; but in some cases, e.g. houses and other handmade things, the principle is in other things and is external, while in other cases it is in the thing, but not of its own accord, such as something which should coincidentally come to be a cause for itself.

Nature, then, is what has been said. And so many things as have such a principle have a nature. And all these things are substances, for there is something underlying each of these, and nature is always in that which underlies. And both these things and the things which belong to them of their own accord are in accordance with nature, such as moving upwards belongs to fire—for that neither is a nature nor has a nature, but exists by nature and according to nature.

What "nature" is and what is "by nature" and "according to nature," then, has been stated. But it would be laughable to try
Charlton's rendering of this passage seems more sensible, though perhaps less faithful to the Greek text, than that of Ross, whom I have followed. But as Charlton may be right, I include his rendering: "... anything else of that sort, considered as satisfying such a description, and in so far as it is the outcome of art, has no innate tendency to change..."

"Coincidentally" is my usual rendering of the important, slippery word sumbebeekos.

I am indebted to Dr. Martin Yaffe, from whose article, "Myth and 'Science' in Aristotle's Theology," I have taken this definition of nature almost verbatim.

"Substances" is my translation of ousia. Alternatives are "being," "essence," etc.
to demonstrate that nature itself exists. For it is clear that
there are many such things, and demonstrating clear things
through unclear things [is a trait] belonging to someone unable
to distinguish between what is known through itself and what is
not known through itself. (And that this can take place is not
unclear; for someone blind from birth might make inferences®
about colors.) So for such people, the reasoning must be about
the terms, while nothing is known.11

And to some the nature and substance of a thing existing by
nature seem to be the primary constituents in the individual
thing, unpatterned12 in itself, as the nature of a bed is the
wood, and of a statue the bronze. As a sign of this Antiphon
says that if someone should bury a bed and the rotting wood
acquires the power to send up a shoot, what comes to be will not
be a bed, but wood; since the disposition of parts according to
convention or art belongs [to the bed] coincidentally, the
substance is that which persists while being continuously affected
in these ways. And if any individual thing is related to
something else in the same way—for instance, bronze (or gold) to
water, bones (or wood) to earth, and similarly with any others—
then that other object is the nature and substance of that
individual thing. Hence, some claim that the nature of all
things is fire; others, that it is earth; others, air; others,
water; others, some of these; and still others, all of them.
[For whatever each thinker] believed to be of this sort, whether
one thing or more, he declared this or these to be all that is
substance, but all others to be affectations or possessions or
The word in Greek is *sullogisaito*, for which the most accurate, but least generally intelligible, rendering would be "syllogizing" or "syllogising." Apostle offers "form syllogisms," but even this is awkward. It is interesting to note that *sum* + *log* (e-grade: *leg*) reaches us through Latin as *collect*. And even though the word has undergone such a change in meaning as to seem unrelated to its ancestor, no less a writer than J. S. Mill, who read Greek at the age of three, uses "collect" in the now archaic sense of "infer" as late as 1863, in his *Utilitarianism*: "My own opinion (and, as I collect, Mr. Spencer's) is that in ethics . . ." (Macmillan/1957/p.77). But even with the authority of such a prose master as Mill behind me, I am not comfortable enough with "collect" to use it.

I follow Barnes in closing the parentheses here, implying that the following sentence bears directly on the sentence preceding the parenthetical remark. Ross, however, includes the last sentence of this paragraph in the parentheses.

The Greek word is *noein*, for which "intelligible" or even "intellectualized" would be a more consistent, but less apt, rendering.

The Greek term, *arruthmiston* (arrythmic), is, though unrelated to *eidos*, perhaps best rendered as "unformed." Apostle offers "without shape," while Ross and Barnes use the very defensible phrase, "without arrangement." "Unpatterned" strikes me as particularly apposite, in light of the example that follows, especially since today's reader is likely to associate "pattern" with the DNA of the wood to which Aristotle refers.
dispositions of substances and this [element] or these [elements] to be eternal (for change does not occur to them from themselves); but he claimed that other things are coming into being and ceasing to be countless times.

In one way, then, nature is said to be the primary underlying material in each of the things having in themselves a principle of motion and change, but in another way, [nature is said to be] the shape or look which accords with the account of the thing. For just as that which is in accordance with art and the artificial is called art, so that which is in accordance with nature and the natural is called nature. And neither in the one case would we say the thing has any accordance at all with art or that it is art if it is only a potential bed, and does not yet have the look of a bed, nor is it so with the things framed naturally; for that which is potentially flesh and bone does not yet have its own nature, or does not exist by nature until it acquires the look which accords with the account which we state in defining what flesh and bone are. Thus, in another way, the nature of things having a principle of motion in themselves would be the shape or look (not separable from the thing except according to the account). The composite of the two, e.g. a man, is not nature but is by nature.

Indeed, the look is the nature more than the material is, for things are better accounted for in actuality than in potentiality. Again, a man comes into being from a man, but not a bed from a bed (and because of this they say that nature is not the shape but the wood—if it should sprout, what would come up
13Gignesthai and phtheiresthai make up as poetic a pair of words as I know of, and have a number of renderings, ranging from "coming to be" and "passing away" to "originating" and "decaying" to "growing up" and "withering." Unable to come up with two English words that would preserve the stunning audial antagonism between the stops of the one and the fricatives of the other, I have abandoned all attempts to be poetic, and limited my rendering to a strictly conceptual antagonism.

14The Greek word, hule, is rendered "matter" by Barnes, Apostle, and Charlton. I follow Ross.

15In order to keep Platonic-Aristotelian confusion to a minimum, I follow Barnes in rendering morphee as "shape" rather than "form," its metathesized equivalent.

16Ross' rendering, "artistic," does not seem to get across the idea of technikon as well as Charlton's "artificial," the aptness of which is, in this case, to be found precisely in its blurring of the distinction in English between the artistic and the technical.
would not be a bed, but wood). But if the shape is art, then also the shape of man is his nature. For a man comes into being from a man. Again, nature spoken of as a coming to be proceeds towards nature [spoken of as a look].\textsuperscript{17} For [nature as a coming to be] is not like what is called doctoring, which is not a process towards doctoring but towards health. For doctoring must start from the art of doctoring, not lead to it. But nature [in the first sense] is not thus related to nature [in the second].\textsuperscript{18} That which grows is growing from something into something. Into what, then, does it grow? Not into that from which it began, but into that towards which it proceeds. So the shape is nature. And shape and nature are spoken of in two ways. For even the privation is in some sense a look. But whether or not there is a privation or contrary in [cases of] simple coming to be must be considered later.
Were Aristotle alive and well and speaking English today, I am not certain he would approve of this last interpolation. But my suspicion is that it will curb confusion more than it will lead to unwarranted interpretations. Ross renders the same sentence as follows: "We also speak of a thing's nature as being exhibited in the process of growth by which its nature is attained." Whether Barnes' rendering, "Again, nature in the sense of a coming-to-be proceeds towards nature," is more or less intelligible than Ross' is a matter to be resolved by Aristotelians wiser than this humble translator.

One reading of this sentence without the interpolations will show why I have followed Ross, who sets them off with parentheses rather than brackets (presumably indicating that he felt they were so strongly indicated by the text as not to require their being presented to the reader as interpolations), rather than Barnes, who foregoes the interpolations altogether.
And since the different senses of "nature" have been distinguished, how the mathematician differs from the student of nature must next be considered; for natural bodies contain surfaces and volumes, as well as lines and points, about which the mathematician inquires. Further, is astronomy different from or a part of natural science? For it is absurd for the student of nature to have insight concerning the sun and the moon, but concerning the coincidental properties of neither, especially
I follow Barnes and Charlton in rendering tini diapherei ho mathematikos tou phusikou as "how the mathematician differs from the student of nature." This word choice may seem inconsistent at first glance. After all, if mathematikos yields "mathematician," why doesn't phusikou yield "physicist" (the rendering of Ross and Apostle)? Well, it seems clear that Aristotle is contrasting the narrow field of mathematics with the broad field of natural study, which includes, but goes beyond, what "physics" will mean to the average reader. Apostle might argue that part of the reader's task in studying Aristotle's Physics is to re-evaluate his assumptions about nature and, perhaps, to broaden his conception of the role of the physicist. This hypothetical objection to "student of nature" is a strong one, which is why I record it here. The interpretation which is clear to me may, after all, be murky to others. (Still, in final support of my case, I add that even Ross offers "student of nature" as a footnoted alternative.)

I render phusikees as "natural science," though episteemee is nowhere nearby.

"Concomitants" is a much better word than this awkward phrase, but is not superior enough to merit a deviation from my standard rendering of sumbebeekos. Ross, Barnes, and Apostle all use "essential attributes," while Charlton, with his gift for convolution, offers "the things which of themselves they have supervening on them." It strikes me as odd that what Ross renders elsewhere as "accidental," he here calls "essential." At least such a radical change merits some explanation.
since those who are concerned with nature appear to be
discussing the shape of the moon and the sun and indeed, even
whether the earth and the cosmos are spherical or not.

Now the mathematician, too, takes trouble about these
things, but not insofar as each is a limit of a natural body; nor
does he investigate the coincidental properties as being
properties in such bodies. And that is why he separates them.
For in thought they are separable from motion and it makes no
difference; nor does any falsity result when they are separated.
Ross and Barnes, who are quite possibly right, offer "writers on nature" rather than "those who are concerned with nature." I follow Apostle.

Because I rendered theooreetikai as "natural sciences," I might be expected to tender theorias as "speculate about," which would work quite nicely here. Later in the chapter, however, "investigate" is dictated by context, so I ask the reader's indulgence in the matter of this inconsistency between the noun and the verb. The obvious solution of "investigative sciences" for the noun conjures up too many vivid images of lab coats and white mice to be effective.

It is a testimony to the slipperiness of sumbebeekos that Ross, having already moved from "accident" to "essential attributes," here adopts "attributes" as his rendering, and even more of a testimony that Barnes, who usually stays clear of Ross' grosser oversights, follows him in this case.

Charlton makes explicit the implicit contrast between this sentence and the preceding paragraph: "Both the student of nature and the mathematician deal with these things; but the mathematician does not consider them as boundaries of natural bodies." Though I admit that such an interpolation (even if it were responsibly marked as such) would be helpful, I am not convinced that it is necessary.

Apostle closes this sentence with the interpolation "{in thought}."
And those affirming the theory of ideas do the same thing, but are unaware of it; for they separate the natural things which are less separable than the mathematical things. This becomes clear if one tries, in each case, to state the definitions both of the things and of their coincidental properties. For odd and even, along with straight and curved, as well as number and line and shape, are without motion; not so flesh and bone and man, for these are said to be like snub nose and not like curved.

And this is also clear in the more natural parts of mathematics, such as optics and harmonics and astronomy (for these are related to geometry in a somewhat converse manner). For geometry inquires about natural lines but not insofar as they are natural, while optics investigates mathematical lines not insofar as they are mathematical, but insofar as they are natural.

And since "nature" has two senses (both the look and the material), we must investigate its objects as we would inquire about the essence of snubness—that is neither apart from the material nor in terms of the material only. Indeed, even here one might raise a difficulty: Since there are two natures, which of them should concern the student of nature? Or should both concern him? But if both natures concern him, so does each of the two. So which of the two: Is it, then, for the same science or for different sciences to know each nature?

The [natural sciences] of the ancients, when looked upon, would seem to be concerned with material, for Empedocles and Democritus touched on look and essence only slightly. But if
Completely unable to cover the range of *legontes* by using any single English word, I take it in one of its most common senses, "declare," and render it as "affirm," but am the first to point out that it could mean anything from Charlton's "talk about" to Ross' "holders of" to Apostle's "posit." The ambiguity of this word makes it particularly apt for Aristotle's description of Plato (and his followers), about whom Aristotle had mixed feelings. (The rivalry between Platonism and Aristotelianism is much more complex than those who reduce it to a blatant dichotomy would have us believe. Aristotle compliments the Platonists in a later chapter. During such moments of respect, Aristotle may have thought of Plato as someone who *talked* about the theory of ideas; and in moments of bitter contention, he may well have seen Plato as—oh so regrettably!—a *holder* of that theory.)

I follow the spirit of Ross, but Charlton offers a perhaps significantly dissimilar rendering: "The point is clear also from those branches of mathematics which come nearest to the study of nature. . . ."

*ti estin*

Literally, "that which has both natures."

I assume that Aristotle uses *ti een einai* instead of *ousia* because he means something other than "substance" by it. And though I have already mentioned that "essence" is a virtual synonym of "substance," no other word is a better rendering of Aristotle's "being" phrases. (See also note 11.)
art imitates nature and the same science is to have insight about the look and the material to some extent—if, for example, a doctor is to have insight about health as well as about bile and phlegm in which health exists; and similarly, if a builder has insight about the look of a house and the matter, i.e. bricks and wooden materials; and likewise regarding the other arts--then natural [science], too, should have insight about both natures. Moreover, that for the sake of which, or the end, \(^1\) belongs to the same science as the means.\(^2\) But the nature is the end as well as that for the sake of which. For when a thing is in continuous motion, there is some end of the motion, and that last-stage is also that for the sake of which. And that is why the poet was carried into absurdity by saying, "he has an end, [death], \(^3\) for which he was born." For not every last-stage claims to be an end, but only the best, seeing that in the arts, too, some of them simply make the material, but others make it serviceable, and that we use things as if they all exist for our sake. For we also are in a sense an end, since "that for the sake of which" has two senses, as was said in On Philosophy.)

Two arts, therefore, govern over and have knowledge of matter: the art which uses the matter and the art which directs the production of it. That is why the using art also is an a sense directive, but as directive it differs from the other insofar as it knows the look, while the productive art knows the material. For the steersman knows and prescribes what sort of look a rudder should have, but someone else knows from what sort of wood it should be made and how it should move. Now in the products of
Perhaps the only way to render this sentence consistently is to use "that for the sake of which [something is done]" and "that which is for the sake [of something]," since ἥνεκα occurs in two constructions in this sentence. The difference between Ross' clarity and this example of consistency is, however, significant enough here for me to follow Ross in using "means" in the second instance. But I feel obliged to include Charlton's fairly consistent rendering as an alternative: "Further, it belongs to the same study to know the end or what something is for, and to know whatever is for that end."

This morbid pun in Greek is lost in English, since English speakers do not habitually use "he ended" as a euphemism for "he died." Still, I may insult the intelligence of several readers by supplying this interpolation, since it is so strongly implied by the context. Perhaps I should have left it out of the text and put it in a note; but--alas!--the readers most in need of such an interpolation are those least likely to read the notes.
art, we make the material for the sake of the function, but in
the products of nature it is there all along.

Again, "material" is a relative term—for distinct looks
there are distinct materials.

Indeed, to what extent must the student of nature have
insight about the look or essence? Up to a point, just as the
doctor has insight about sinews and the smith about bronze, (i.e.
until he has insight about the purpose\textsuperscript{17} of each);\textsuperscript{18} and the
student of nature is concerned with things which are separable in
look, but exist materially. For man is begotten by man and the
sun. It is the task of first philosophy to define how the
separable exists and what its essence is.
17 Following Ross, I use "purpose" as yet another rendering of *heneka*.

18 In lieu of this parenthetical remark, Apostle offers the following: "for each of them {sinews and bronze} is for the sake of something."
Now, having made these distinctions, we must examine how many and what sorts of causes there are. For since the inquiry is for the sake of having insight, and we do not think ourselves to have insight concerning a thing until we have acquired the "why" of it (and this is the grasping of its first cause), it is clear that we must also do this as regards coming to be and ceasing to be and every natural change so that having insight concerning their principles, we may try to bring the things we seek back to these principles.

In one way, then, a cause is said to be that out of which something comes to be and which subsists in itself, as the bronze [is a cause] of the statue, the silver [a cause] of the bowl, and the genera of these [are also causes].

But in another way, the look or the paradigm is called the cause; and this is the definition of the essence and its genera (e.g. the ratio 2:1—and number in general—[is the cause] of the octave), and the parts in the definition.

In yet another way, the first principle of change or of
Reversing "how many" and "what sorts of" for the sake of rhythm—ironically, a rhythm broken for any reader who stops to read this note.

Instead of "acquired the 'why,'" Charlton offers "answer the question about it 'On account of what?'"

Apostle offers, "In one sense, 'a cause' means (1) that from which, as a constituent, something is generated..." I follow Ross' spirit.

I following Apostle for the "are causes" part of this interpolation and Ross' spirit for the rest of it. The cases of the many nouns in this sentence make it crystal clear in Greek, which makes me particularly uncomfortable with this mammoth interpolation. Is it necessary? Perhaps not. Ross and Apostle take much shorter approaches. And Ross doesn't even consider it necessary to mark his use of "species" (for which Aristotle would probably have used eidos) as an interpolation. Though it is difficult to argue that by adding so many words I have made the sentence any simpler, I wished to avoid the ambiguity caused by overusing demonstrative pronouns.

I have translated this difficult parenthetical remark in the most intelligible way I could think of. Aristotle's example is much simpler than my punctuation of it might lead one to believe. The highly specific ratio 2:1 occurs within the general context of number. And the octave is composed of a number of specific 2:1 ratios. I believe my rendering gets this idea across better than Ross', "(e.g. of the octave the relation 2:1, and generally number), and the parts in the definition," as well
staying unchanged is called a cause; for instance, the designer is a cause; and the father is the cause of the child; and generally what makes is a cause of what is made, and what changes of what is changed.

In still another way, the end (which is that for the sake of which) is called a cause; for example, health is the cause of walking about. "Why does he walk about?" We say, "In order to be healthy"; and having spoken thus, we think ourselves to have assigned the cause. And indeed, those things which, after that which started the motion, lie between the coming to be and the
as Apostle's, "for example, in the case of the octave, the ratio 2:1, and, in general, a number and the parts in the formula."

Ross renders bouleusas as "the man who gave advice", while Barnes and Charlton use "the man who deliberated." Apparently, Ross thinks of the advisor as one who counsels others either to action or to passivity, whereas Barnes and Charlton think of deliberation as a way of advising oneself about those same options. But the three examples Aristotle uses to illustrate this point all concern deeds, not thoughts or words. And "designing" comes far closer than "advising" or "deliberating" to deeds. A carpenter neither thinks nor talks a house into existence. He builds it from a design, be it written or thought. And though a father does not design his child, he and his wife might very well have a child by design.

It may be important to use "walk about" instead of "walk" (as Apostle and Charlton do) for peripatei, since the idea of walking about is more likely to remind the reader of Aristotle's sobriquet, the "Peripatetic Philosopher."

This brilliant example does much more than demonstrate the point Aristotle is here making. Obviously, the immediate point is that health is the end to which walking (exercise) is a means. He thus demonstrates nature as a look. Because one wants to attain the look of health, one exercises. But it is equally obvious that one must be healthy enough to exercise before one can do so, which is why this example simultaneously demonstrates how health is the material out of which walking comes to be.
end (such as reducing weight or purging or drugs or [medical] instruments in the case of health), are all for the sake of the end, while differing from each other in that some are activities, others instruments.

"Causes," then, are spoken of in about so many ways. And, since the causes are spoken of in so many ways, it follows that there are many non-coincidental causes of the same thing; for example, in the case of a statue, not with respect to something else but insofar as it is a statue: Both the art of the sculptor and the bronze are causes of it, though not in the same way, but the one [the bronze] as material and the other [the art of the sculptor] as the source of motion. And some things are causes of each other; e.g. working hard is a cause of fitness and fitness is a cause of working hard, though not in the same way, but the one as the end, and the other as the source of motion. Moreover, the same thing is a cause of contraries; absence is sometimes given as a cause of the contrary thing, e.g. the cause of the wreck of the ship was the absence of the pilot, whose presence was the cause of safety.

And all the causes just mentioned fall into four most evident types. For those things from which other things come to be are causes: the letters of the syllables; the material of manufactured things; fire and the like of bodies; the parts of the whole; and the hypothesis of the conclusion. In each of these pairs, the first member (e.g. the parts) is a cause in the sense of that which underlies, the second member in the sense of essence—the whole and the composite and the look. But the
I may be clinging too tenaciously to the Greek text here. Ross simplifies this convoluted phrase to "the intermediate steps," and is, as far as I can tell, perfectly justified in doing so. However, I prefer to be literal in all but the most unintelligible cases.

Charlton's interpolation, "surgical," reads more smoothly here, but is too restrictive for what Aristotle probably means by instruments (e.g. splints, poultices, etc.).

\[ \text{\textit{ou kata sumbebeekos}} \]

\[ \text{\textit{hothen}} \]

Ross adds "reciprocally," which is almost helpful enough for me to add too.

Vice versa does not seem too helpful here.

See note 9.

tropous

skeuastoon

I here render \textit{ta men} liberally as "the first member," and later, \textit{ta de}, just as liberally, as "the second member."
seed and the doctor and the designer and generally the maker are all sources whence comes the principle of change or of stillness, while the others are causes in the sense of the end or the good of the rest; for that for the sake of which tends to be what is best and the end of the things that lead up to it. Let there be no difference in calling the same thing "good" or "apparently good."
Apostle, who offers "that which acts" may be right in rendering to poioun in this very general sense, especially since the context makes it clear that Aristotle is here speaking generally. I am not convinced, however, that he wants to include things which act without design in this particular context, and therefore follow Ross.

Rendering allooon strictly here would yield the awkward phrase, "while the others are causes in the sense of the end or the good of the others." Which others? I therefore use "the rest," but hasten to warn the reader against taking this term as an almost sub-conscious reinforcer of the concepts this chapter is largely about: motion and rest.

The single most difficult judgment I face in this chapter concerns ethelei. Ross' "[it] means" and Barnes' "[it] tends" are both sound renderings and are obviously quite different. Apostle and Charlton both use "tends," (though it is silly to decide such a matter on the basis of a vote). I tell the reader frankly that I don't know which is better, that I fear I have chosen poorly. I must point out that Ross' authority as an Aristotelian is staggering and that if he is wrong, he is wrong for reasons much better than those for which I may be right. An important point in Ross' favor is that ethelei could be used merely to indicate futurity, meaning that the sentence could be interpreted loosely as "For the rest of this book, 'that for the sake of which' will be called 'the best.'" Such an interpretation is particularly plausible when one considers the sentence that follows. Nevertheless, ethelei most often means
These, then, are the causes and their number in kind. But the modes of cause are many in number, though even they are fewer when brought under headings. For causes are spoken of in many ways; and one cause may be prior or posterior to another of the selfsame look; for example, the doctor and the artisan are causes of health, and the cause of the octave is the ratio 2:1 or number, and that which includes is always a cause to the individual thing. Yet another mode of cause is the coincidental and its genera; e.g. in one way the cause of a statue is Polyclitus, while in another it is a sculptor (who coincidentally is Polyclitus). And that which includes the coincidental is also a mode of cause; for example, a man or, more generally, an animal, would be the cause of the statue. Even of coincidental things, some are more or less removed than others. Such would be the case if a pale man or a musical man were to be called a cause of the statue.

Now all causes, both proper and coincidental, are spoken of as potential or actual; for example, the cause of a house’s being built is a builder or a builder who is building.

Similar distinctions can be made in the things of which the causes are causes; for example, the cause may be a cause of this statue or of a statue or of an image in general, and it may be a cause of this bronze or of bronze or of material in general. And
"it wishes" or "it desires," which makes me suspect that even when used as "it means," it registered in the Greek mind as something analogous to the French idiom *il veut dire* ("it wants to say"), in which case the sense of tendency is included within the concept of meaning. Essentially, I use "tends" to preserve a shade of meaning that I am not certain existed, which is why I cannot stress the importance of Ross' alternative highly enough.

23 This rendering of the dative form of *eidos* is here dictated by English idiom.

24 Charlton's more consistent rendering of *tropoi* results in the phrase "ways in which something can be a cause," which brings in so many extra words that one must wonder about the consistency of the phrase.

25 I render *homoeidon* as "selfsame look" in order to draw attention to this prefixed form (for which "same look" would be adequate).

26 Ross renders *technitees* as "expert." Perhaps Charlton's "man of skill" would be best here.

27 Charlton's rendering of this last phrase, "and always there are the particulars and the genera which embrace them," is tenable, though perhaps too free in its interpretation of *pros*.

28 Perhaps "[member of the] animal [kingdom]" would be better here. Ross uses "a living creature." I prefer to remain consistent with my rendering of *zooion* in Metaphysics A.1.

29 English speakers are likely to see paleness and musicalness as equally unrelated to the art of sculpture, and might infer that Aristotle is here providing two examples of attributes
the same may be said of coincidental properties. And moreover, having combined these individual things, neither Polyclitis, nor a sculptor, but Polyclitus the sculptor, for example, will be spoken of.

But nevertheless, these uses are six in number, and each is spoken of in two ways. Each may be spoken of as an individual thing or as a sort [of thing], as a coincidental thing or as a sort of coincidental thing, as a combination or as each by itself, and all are spoken of either as actual or as potential. And they differ to the extent that causes that are both actual and individual either exist or cease to exist simultaneously with the things of which they are causes, e.g. this doctor who is healing with this person being healed and this builder who is building with this house being built. But it is not always so with respect to things in potential, for the house and the builder do not cease to be simultaneously.

It is always necessary to seek the foremost cause of each thing, just as in other cases; e.g. a man builds a house because he is a builder, and a builder builds according to his art of building. So then, this latter cause is prior; and it is thus in respect to all cases. Moreover while generic effects are of generic causes, individual effects are of individual causes, e.g. statue of sculptor, and this statue of this sculptor. And
unrelated to sculpture, which is hardly likely, especially if one
recalls that Aristotle rarely misses an opportunity to provide an
example or six; considering the sentence preceeding these
texts, it would only be natural for him to provide us with 1) a
trait that is more removed from sculpture and 2) a trait that is
less removed from it. "Pale" comes first because being and
albino has nothing to do with being a good sculptor, while being
"musical" (i.e. having a sense of balance and harmony) comes
second because it is intimately related to that art.

30 Here Ross uses "accidental attributes" for sumbebeekos.

31 genos

32 Charlton, construing the first part of this sentence as a
question, renders it as "What difference does that make?" Such a
rendering does not much facilitate reading and makes no very
important difference.

33 I am puzzled by Aristotle's use of the extremely vague
akrotryphon here, which Ross renders as "most precise," Apostle as
"ultimate," and Charlton (more literally--and perhaps more
wisely) as "topmost." (Think of the Acropolis.) I use
"foremost" both because of it means "importance" and because of
its associations with "foreground," associations which I think
are desirable because high things, such as the Acropolis, are
usually thought of as being in the foreground. Another possible
rendering is "end-most" (since akro can mean end), which I do not
use because I am not sure whether Aristotle wants to remind us of
telos here or not. Other alternatives include "most excellent,"
"first," "outermost," and "inmost."
potential effects are of potential causes, while actual effects are of actual causes.

Let this, then, suffice for our description of the number of causes and the ways in which they are causes.
I follow Apostle in rendering *dunameis* and *dunatoonas* as "potential causes" and "potential effects." Ross uses "power" and "possible effects."

Ross uses the simpler (and perhaps better) phrase, "modes of causation."
Now chance and the automatic are spoken of as causes; and many things are said both to be and to come to be through chance and through the automatic. In what manner chance and the automatic are related to these causes, then, and whether chance and the automatic are the same or different, and generally what chance and the automatic are, must be looked into; for some people are even baffled as to whether there are such things or not. Indeed, they say that nothing at all comes to be by chance, but that for everything we speak of as coming to be by chance or the automatic there is a definite cause. For example, coming by chance into the market and meeting someone whom one wanted but did not expect to meet—the cause [of the meeting] is the desire to go and buy in the market. Similarly, in other cases reckoned to be by chance, there is always something to be taken as the cause—but not chance!—since it would truly seem strange [to these people] if chance were a something; and one might even raise the question of why on earth not one of the ancient wise men said anything definite about chance when speaking of the causes of coming into being and ceasing to be. Therefore, it is probable that they did not consider a single thing to be by
1I follow Ross and Barnes in rendering *tuchē* as "chance." Apostle, Hope, and Charlton all use "luck." Although there are times when Aristotle seems to use the word in the latter (ameliorative) sense, it is, for the most part, a neutral term. One good reason, however, for using "luck" is that the layman can easily distinguish luck from the automatic, while it is difficult to see the distinction between chance and the automatic. Nevertheless, I would rather have the distinction made by Aristotle than by the reader's vocabulary.

2I follow Charlton in rendering *automaton* as "the automatic." Ross and Barnes use "spontaneity", while Apostle and Hope use "chance."

3I render *en* liberally as "related to."

4*Episkepteon* is unrelated to *eidēnai*, but is a vision-word nevertheless.

Also, Ross et al. end the first paragraph here.

5I believe this interpolation is necessary, since sarcasm is so rarely translatable.

6Hope puts this question into the mouths of Aristotle's unenlightened contemporaries, as though they appeal to the ancients' failure to mention "chance" as evidence that it doesn't exist. He may be right in this interpretation, though it makes no crucial difference. I follow the spirit of Ross.
chance. But this too is amazing; for many things come to be and are by chance and the automatic. And although no one is unaware that each of these is attributable to some cause (as the old argument said which denied chance), nevertheless they all speak of some of those things as being by chance, but of others as not being by chance. And because of this, mention should at least have been made of the matter in some way or other.

But none of them considered chance to be a something, such as love or strife or intellect or fire or some other such thing. Therefore it is strange, whether they supposed that chance does not exist, or whether they thought that it does but neglected to mention it—and that when they sometimes used it!—as with the case of Empedocles, who said that air is not always separated into the highest region, but howsoever it might be separated by chance. At any rate, in his cosmology, he says that
The word I translate as "strange" above is _atopos_. I here render _thaumaston_ as "amazing." But Hope, a very competent translator, renders both words as "strange," though he puts the second in quotation marks. This so effectively brings out Aristotle's irony that I am tempted to follow suit, though I content myself with this note.

I vacillate in rendering the forms of _gignoonoκοο_ as either "coming to be" or "coming into being" according to the dictates or rhythm.

Ross reduces this litotes to "all know," perhaps thinking that what he forfeits in style he gains in simplicity. I believe Aristotle's diction here is as followable as it is colorful.

Hope adds "{of Democritus}.

Apostle and Hope render _philian_ as "friendship."

Ross renders _noun_ as "mind."

Ross is at his most liberal in his rendering of this sentence: "Certainly the early physicists found no place for chance among the causes they recognized—love, strife..."

Also, perhaps "another such something" would be better than "some other such thing."

Hope's Aristotle must have gasped _atopos_ with a contorted face as he presented this lecture, since that would be the only reason for the moralizing tone found in Hope's text: "Their failure to develop a theory of luck and of chance is unjustifiable." Aristotle may have been given to such outbursts. (Perhaps his works would be more appealing to the layman if they were presented by histrionic professors.) While acknowledging
"it happened\textsuperscript{15} to run that way at the time,\textsuperscript{16} but often ran otherwise." He also said that most of the parts of animals came to be by chance.\textsuperscript{17}

And there are some who say that the automatic is the cause of our heavens and of all the cosmos; for they say the vortex came to be automatically as did the conditions of motion and separation in the present arrangement of everything.\textsuperscript{18} And this is utterly amazing; for they say that plants and animals neither are nor come to be by chance, but that the cause is nature or the intellect or some other such thing (for it is not a chance thing that comes to be from an individual seed, but an olive tree from this [particular] sort\textsuperscript{19} [of seed], and a man from that [particular] sort). But they also say that the heavens and the most divine of visible things came to be by the automatic, which cause is not in any way like the causes of animals and plants.\textsuperscript{20} And yet if this is so, it deserves attention, and something might well have been said about it. For, besides the statement's being absurd in other ways, it is still more absurd for people to speak thus when they observe nothing coming to be automatically in the heavens, but many things happening by chance among the things which [according to them] are not by chance, although, in all probability, the opposite should have come to be.\textsuperscript{21}

And there are others who seem to think that chance is a cause, but that it is inscrutable to human thought,\textsuperscript{22} as being something divine\textsuperscript{23} and rather godlike.\textsuperscript{24}
that Hope may be right, I follow Ross’ spirit.

15 Sunekurse is not, as one might expect from its rendering, related to sumbebeekos.

16 Apostle renders this phrase as “it happened to run into that region at that time.”

17 Compare Charlton’s rendering: “And he says that the parts of animals mostly came to be as the outcome of luck.”

18 I follow Apostle in construing the “vortex” as something distinct from the “conditions of motion,” etc. Ross, as he did in Metaphysics A.2, renders kai as “i.e.” rather than “and,” and may be as justified in doing so here as there: “They say that the vortex arose spontaneously, i.e. the motion that separated and arranged in its present order all that exists.

19 In order to avoid “kind,” which I have used once as a rendering of eidos, I use the clumsy “sort” both here and in the next phrase.

20 Though fairly liberal, perhaps Charlton’s rendering of the end of this sentence is best: “... without there being any such cause as animals and plants have.”

21 Ross may be right to end this sentence with the liberal rendering, “... whereas we should have expected exactly the opposite.”

22 dianoia

23 theion

24 Because the Greek seems redundant itself, I follow Apostle in rendering daimonioteron as “more godlike” despite the resultant pleonasm. Ross cleans Aristotle up by offering “as being
So it is necessary to examine what chance and the automatic are, whether they are the same or different, and how they fall into the causes already distinguished.
a divine thing and full of mystery."

I render **skepteon**, the un-prefixed form of **episkepteon** (for which I used "look into"), as "examine." Though I might have used "see" (a word close enough to "look" to qualify as the best way in English to say "look into" without using a preposition), I feared that "see" would call to the reader's mind too many associations with **eidos**. Perhaps the distinction between "look into" and "look at" is significant enough to warrant using the latter as a rendering of **skepteon**; but my guess is that the change would go unnoticed by even the most perceptive readers.
First, then, since we observe that some things always, and that other things as a rule,¹ come to be in the same way, it is clear that neither chance nor what comes by chance² is spoken of as the cause of these—neither of that which is by necessity and is eternal,³ nor of that which is as a rule. But since there are other things that come to be besides these,⁴ and [since] all say that they are by chance, it is clear that there are such things as chance and the automatic; for we know that things of this sort are by chance, and that things by chance are of this sort.

And of things which come to be, some come to be for the sake of something,⁵ others not. And of the former, some are in
I render *epi to polu* as "as a rule" even though the awkward phrase "for the most part" is more literal.

Hope simplifies "what happens by chance" to "random events," a simplification which I find neither misleading nor particularly helpful. I would add that this simplification indicates some lack of confidence on Hope's part about rendering *tucheē* as "luck," since random events may or may not bring a boon to anyone, while lucky events are lucky only to the extent that they bring some benefit to somebody.

I usually render *aiei* as "always," but here follow Apostle for clarity's sake.

Hope often reads more like a commentator than a translator; and despite my feeling that a translator should be as literal as possible, I admit that sometimes his far-fetched terminology helps one to understand Aristotelian concepts much more easily than the most skillful literal renderings: "But everyone distinguishes besides universal and typical events, exceptional or nonnormal." I sometimes feel that someone should throw the Greek text aside after outlining its essential ideas, and present those ideas without having to struggle under a linguistic yoke. But then I realize that the fundamental problem with such an approach is that the person undertaking the task is presumed to understand Aristotle, and will only lead others into his own errors if that presumption is wrong.

Apostle adds the interpolation "{else}" here, which puzzles me, since the context does not seem to indicate that Aristotle means to exclude things which exist for themselves from this
accordance with choice, others not; but both are among things which are for the sake of something. So it is clear that even among the things which are outside what is necessary and what is as a rule, there are some to which being-for-the-sake-of-something possibly belongs. Anything that may be done by thought or by nature is for the sake of something. Indeed, whenever things of this sort come to be coincidentally, we say they are by chance. For just as a thing is, so may it also be a cause, either according to itself or coincidentally. The art of building in itself, for example, is a cause of a building, whereas the pale or the musical is a cause coincidentally. That which in itself is a cause, then, is definite, while the coincidental cause is indefinite; for countless coincidences may come together in one thing. As has been said, then, whenever this happens among things which have come to be for the sake of something, it is said to be by the automatic or by chance. (The difference between these must be determined later, but for now, let it suffice that both are clearly among the things which are for the sake of something.)

For example, a man collecting contributions would have gone to a certain place for the sake of receiving the money if he had had insight. But he went there not for the sake of [collecting the money], and it was by coincidence that he received the money in going there; and that [happened] neither because of his going to that place as a rule nor out of necessity. And the end, which is getting the money, is not one of the causes for him, but is of the things of choice and is by
class. But perhaps Apostle sees the sapling as something so distinct from the tree it grows into--its telos--that he can speak of the one thing as being for the sake of the other thing. Such subtlety is neither implied, nor necessary, nor even desirable here.

Following Apostle, I render proairesin as "choice." Ross uses "intention" at first, but switches to "choice," and later adopts "purpose."

Hope deviates considerably from everyone else: "Clearly, then, things may not only have necessary uses and probable uses, but they may also have at least some other possible uses."

Hope renders dianoia as design.

We may add "incidentally" to the list of Ross' renderings of sumbebeekos.

Though a sense of the musical is obviously not as essential to a carpenter as to a sculptor, the implication here is that its role in carpentry is negligible at best.

I take eranon in its general sense of "contribution," but could just as easily have followed Ross in rendering it in its more specific sense of "subscription for a feast."

Hope's rendering of this sentence, "Suppose, for example, that a creditor would have gone to a market to recover his loan had he known that his debtor was there," leaves little place for eranon, though it seems to make Aristotle's point just as well as a rendering in Ross' spirit.

Instead of "for him," Ross uses "present in him."
thought—and in this case the man’s coming is said to be by chance. But if he had chosen to go there for the sake of this, or if he always went there, or if he went there as a rule, he would not be said to have gone there by chance. It is clear, then, that chance is a coincidental cause of things which involve choice and are for the sake of something. Therefore, thought and chance concern the same thing, for choice is not without thought.

The causes, then, of something which might come to be by chance must be indefinite; and that is why chance seems to be indefinite and inscrutable to man, and why it might seem that nothing could come to be by chance. Since all these things are said reasonably, they are said rightly. For things do come to be by chance, since they come to be coincidentally and since chance is a coincidental cause. But by itself, chance is a cause of nothing; for instance, a housebuilder is the cause of a house—that he [may be] a flute player is [a matter of] coincidence. And in the case of the man who received the money when he came, but did not come for the sake of receiving the money, [the coincidental causes of his coming] are countless, such as wishing to see someone or following someone or avoiding someone or going to see a play. And it is right to say that chance is something unaccountable; for the accountable is that which is [the case] always or as a rule, while chance is [present] in things which come into being in other ways. Hence, since causes of this sort are indefinite, chance is also indefinite. But nevertheless, in some cases one might raise the
To preserve rhythm, I reverse the order of "are for the sake of something" and "which involve choice."

Ross renders this last phrase as "for purpose implies intelligent reflection," which, for all its smoothness, is unnecessarily liberal in my opinion.

Though I render eulogoos as "reasonably" rather than "well grounded," I follow Ross' spirit. Interestingly, however, since orthoos comes first in the phrase orthoos legetai eulogoos (which is most intelligible as an ex commun construction), one might do well to render the entire sentence as "Since all these things are said rightly, they are said reasonably." The reader may be inclined to gasp, "Atopos," at the apparent reversal of reasoning in this alternative, but will, after some reflection, see that it is not so ridiculous after all.

I am unable to make out why Barnes does not follow Ross here, offering "For all these statements are correct, as might be expected," instead.

"By itself" is my liberal rendering of aploos, for which the usual "simply" would be awkward here.
question of whether any chance thing, then, might come to be a cause of a chance [occurrence]. For example, the cause of health may be the fresh air or the sun's heat, but not a haircut; for some coincidental causes are nearer [to the effects] than others.

Now, chance is called "good" when the result is good, but "bad" when the result is bad; and, when [either] result is sizable, it is called *bon chance* or ill-chance. And therefore, falling just short of some great evil or great good is taken as *bon chance* or as mischance; for [since] the small difference seems negligible, [the sizable evil or good] is reckoned in thought as if attained. Further, [even] *bon chance*
I follow Ross in interpolating "occurrence," though I am not sure it belongs here. Without it the sentence is somewhat baffling. But it may be that one learns from Aristotle by puzzling out his baffling statements.

I follow Ross in rendering apokekarthai (a shearing off) as "haircut." But Apostle takes it metaphorically as "purge" (a common rendering of katharsis). While it is probable that Herodotus was not the only Greek to smirk at the notion of purging for the sake of health (especially when practiced by Egyptians), having one's hair cut for the same end is even more absurd. And since laxatives are not generally ridiculed as quack remedies in today's society, I would use Ross' alternative even if I didn't think Apostle wrong.

Though this sentence may seem a sufficient reason in itself for using "chance" rather than "luck" for tuchée, I must point out that "bad luck" functions much better as a pejorative than "ill-chance."

Though I dislike resorting to French in an English translation, "bon chance" seems the most effective rendering of eutuchia for preserving the root of the word in translation. Other translators use "fortune," "ill fortune," and "misfortune" with such facility that I too am tempted to forfeit etymology for the sake of smoothness.

dustuchia

stuchein

I follow Apostle's spirit in this fairly literal rendering of hoti hoos huparchon legei hee dianoia because I am unable to
is reasonably regarded as fickle, for chance is fickle, since the things resulting from chance do so neither always nor as a rule.

Both, then, as has been said, are coincidental causes—both chance and the automatic—among things which come to be neither by themselves nor as a rule, and of such of these as might come to be for the sake of something.
come up with a better alternative. Ross uses the more liberal "ignoring the hair's breadth of difference," while Charlton goes even further, offering "what is so close seems no distance off at all," which only makes one regret that Aristotle does not translate more aphoristically.

I render ἀβεβαῖον as "fickle" rather than more etymologically as "unstable" in order to remind the reader of Machiavelli's discussion of fortuna, even though I can't be certain that he had this passage of Aristotle's in mind when he compared fortuna to a woman.

Another rendering is "nothing resulting from chance does so either always or as a rule."

See note 18.
[Chance and the automatic] differ in that the automatic is more encompassing.¹ For all that is by chance is by the automatic, but not all that is by the automatic is by chance; for chance and that which is by chance can only belong to something to which bon chance and action² in general belong. And that is why chance is necessarily concerned with actions. And a sign of this is that bon chance seems to be the same as happiness³ or close to it; and happiness is some [sort of] action, for it is a good action. Hence, whatever is not capable of action is not capable of doing anything by chance. And therefore, neither a soulless thing nor a beast nor a child can do anything by chance, because each of these lacks choice; nor do bon chance or mischance belong to such things, except metaphorically,⁴ as when Protarchus, for example, pronounced the stones of which altars are made to have bon chance in that they are honored, while others similar to themselves⁵ are walked upon. But even these things are in a way affected by chance whenever someone does something that, by chance, concerns them—but in no other way.

The automatic, however, is present in both the other animals and in many soulless things. We say, for example, that the horse, when it came to a safe place, did so by the automatic, and not that it came for the sake of safety.⁶ Again, the tripod fell [on its feet] by the automatic;⁷ for while it exists for the sake of being sat on, it did not fall [upright] for the sake of being sat on. Hence, it is clear that by "the automatic" we are
More literal renderings of pleion are "fuller" and "wider," neither of which is particularly meaningful here. Ross' "the wider term" may well be preferable to my rendering.

I follow Apostle in rendering praxis as generically as possible. Ross uses "moral action," but is not followed by Barnes. Hope and Charlton take even larger leaps, using "the conduct of life" and "rational activity" respectively. All these renderings are tenable, though Ross' strikes me as the most likely one to mislead the layman.

With some reservations, I use the traditional rendering, "happiness," for eudaimonia. After katharsis and arete, I suppose eudaimonia is the word college students most frequently associate with Aristotle. And I grudgingly defer to those who have learned that it is usually translated "happiness," though I much prefer "good-spiritedness."

I follow Ross in rendering homoioteeta as "metaphorically"; other possibilities include "by analogy," "by resemblance," etc.

Apostle emphasizes the differing lots of the stones by using "while those leading up to the altar are walked upon," which is perhaps poetic enough to merit the deviation from the text.

Another rendering: "We say, for example, that the horse came by the automatic, in that it was saved because it came, but did not come for the sake of being saved."

Ross suddenly departs from "spontaneously," his usual rendering of automatos, and uses "of itself," (a tenable rendering) in this one instance.
referring to those things which come into being strictly for the sake of something, when they come into being not for the sake of what happens, and having an external cause. By "chance," however, we are referring to those of the automatic things which are chosen by [beings] that have choice. And an indication of this is [the phrase] "in vain," which is said when one thing is [done] for the sake of something else, but that which it is for the sake of does not come to be. For instance, if walking is for the sake of a bowel movement, and if the bowel movement does not come to be after walking, we say that we have walked in vain and that the walk was vain. So, that which is naturally done for the sake of something else is "in vain" whenever it does not bring about that to which it was the natural means. [But only the natural means to an end can be "in vain," since it would be ridiculous to say that a man had bathed "in vain" because the sun was not thereby eclipsed; for the one was not done for the sake of the other. Indeed, the automatic, as the saying has it,
This interpolation is almost essential for an understanding of this sentence on its first reading. Perhaps the best way to get at the sentence's meaning, however, is to read it once more after having understood it with "done," but this time ignoring the interpolation.

"Come to be" sounds so absurd in conjunction with "bowel movement" that I am tempted to deviate from this standard phrase in favor of "result." But for all I know, Aristotle may have wanted to get a chuckle or two out of this example from the pupils who first heard this lecture.

The literal rendering of the last part of this sentence is, in my opinion, awkward enough to merit my deviation: "... whenever something which is for the sake of something else does not accomplish that something else which it was naturally for the sake of."

I am alone in my interpretation of this sentence and am none to confident in my solitude. The Greek reads houtoo dee to automaton kai kata to onoma hotan auto mateen genetai. The phrase kata to onoma has several meanings, among them "according to the saying." But the fact that this is a tenable rendering hardly keeps it from being a tenuous one. Ross' "Thus the spontaneous is even according to its derivation the case in which the thing happens in vain," is typical of the orthodox interpretation. He adds in a footnote, "There is no parallel in English for this false derivation," without making it clear
happens in vain whenever it happens. The stone did not fall down for the sake of striking the man, and therefore fell down by the automatic, [seeing]¹⁴ that it might have been dropped by¹⁵ someone [else] for the sake of striking him.¹⁶
whether Aristotle knew that *automaton* was not really derived from *
*auto mateen* when he made this assertion. Orthodox opinion may be right, especially when one considers that in *Metaphysics A.2*, Aristotle uses the phrase *kata teen paroimian* twice to mean "according to the proverb." Why would he change here? I am not sure that he does, but doubt that Aristotle was given to false etymologies. Moreover, the "saying" alternative is sensible and tenable enough to merit its being put forward as a possibility; one reading of the Greek sentence aloud without the "according to the saying" phrase will demonstrate how easily such a word cluster might embed itself in one's memory—to be used over and again in speech: *automaton hotan auto mateen*. Incidentally, I render *geneetai* as "happens" in order to give the supposed saying a homespun quality, a quality that passes for eloquence in today's English sayings.

14I follow Apostle; Ross uses "because."

15I render *pesoi an hupo tinos* as "might have been dropped by someone" because of the difficulty of the agency construction here; it might be more literally and effectively rendered as "might have fallen by someone[‘s hand]."

16I disagree with Ross' punctuation of the Greek text, though no great difference in translation results. His own rendering of this difficult passage, which may be helpful, is as follows: "The stone that struck the man did not fall for the purpose of striking him; therefore it fell spontaneously, because it might have fallen by the action of an agent and for the purpose of striking."
And [what is by the automatic] is most distinct from what is by chance in things which come to be by nature. For whenever something comes to be contrary to nature, then we say it is not by chance but rather by the automatic. But even this [case] is different, for in the one case the cause is external, while in the other it is internal.

What chance and the automatic are, then, and how they differ from each other has been stated. As for the ways in which they are causes, both are sources of change; for each is always a cause of something either by nature or by thought, though the number of ways in which they are causes is countless. And since the automatic and chance are causes of things which might come to be caused by the intellect or nature, whenever something comes to be a cause from these things alone, it does so coincidentally. And since nothing existing by coincidence is prior to anything existing in itself, it is clear that no cause existing by coincidence is prior to any cause existing in itself. The automatic and chance are therefore posterior to intellect and nature. So even if the automatic is more the cause of the sky [than anything else], intellect and nature must be prior causes of many other things and of the universe.
Following Ross and Apostle, I take "things by the automatic" to be understood at the beginning of this sentence, since the automatic is under discussion above and in the following sentence. Charlton, however, may be right in making no such interpolation: "We are furthest from an outcome of luck with things which come to be due to nature."

"And of the ways. . ."

After translating this passage nearly word-for-word, I looked at the alternative renderings of Ross, Apostle, et al., which, for all their clausal rearrangements, seemed even less intelligible than my literal rendering. After spending a good deal of time and effort trying to come up with my own rearrangement, I found that perhaps the literal rendering is the most readable. But for those unable to make their way through it, I provide alternatives.

Ross: "Spontaneity and chance are causes of effects which, though they might result from intelligence or nature, have in fact been caused by something incidentally. Now, since nothing which is incidental is prior to what is per se, it is clear that no incidental cause can be prior to a cause per se.

Apostle: "Now, since chance and luck are causes of effects caused by the intellect or by nature, when each of them comes to be an accidental cause of such an effect, then it is clear that, since nothing that is accidental is prior to what is essential, no accidental cause is prior to an essential cause."

"tou pantos (literally, "the all")
It is clear that there are causes, and that their number is as great as we say, since the "why"\(^1\) includes\(^2\) the very same number [of causes]. For the "why," in its last-stage,\(^3\) is related: 1) to the essence of unmoving\(^4\) things (e.g. in mathematics, the last-stage is related to the definition of "straight" or of "commensurability" or of something else);\(^5\) 2) to the first motion\(^6\) (e.g. "Why did they go to war?" "Because they were raided."); 3) to that for the sake of which (e.g. ["Why did
Though "explanation" would certainly facilitate the layman's first reading here, I follow Ross et al. in using the more literal "why" for *dia ti*.

*perielelefen* (literally, "encircles")

Following Ross, I take the first occurrence of *eschaton* (next to *dia ti*) in this sentence to refer to the "why" itself, meaning that it bears directly on all four causes that follow. Apostle, however, may be right in restricting it to the first cause, in which case Aristotle is discussing the "why" in its last-stage only in the first cause, and the "why" itself in the other three.

*Akineetoi* might also be rendered "unchanging."

The idea here is not nearly as complex as the Greek, which makes this passage particularly difficult for the literal translator (inasmuch as he must contend with a strong temptation to translate such an obvious point freely so as to facilitate his reader's comprehension). Ross gets the idea across much less sloppily, but at the cost of deleting the second *eschaton*: "The 'why' is referred ultimately either (1), in things which do not involve motion, e.g. in mathematics, to the 'what' (to the definition of 'straight line' or 'commensurable,' &c.)."

I take the risk of rendering *kinesan prooton* literally as "first motion," realizing that some readers may associate this phrase with the famous "Prime Mover," but in the hope that the example that follows will crush that association at its inception. Obviously, a border raid was not the first motion in the history of the universe. And yet, I may be wrong in
they go to war?"") or 4) to the material (e.g. in things coming into being). It is evident, then, that the causes are these and that this is how many there are.

And since there are four causes, the student of nature is to have insight concerning them all, and will naturally relate the "why" back to all of them: the material, the look, the [source of] motion, and that for the sake of which. And three of them come to the same thing in many cases; for the essence and that for the sake of which are one, while the first source of motion is of the same species as these (for a man comes into being from a man)--and such is the case with movable movers in general. And such things as are not of this sort are not [causes] within nature; for they [move things, but] have in themselves neither motion nor a principle of motion, but are immovable. Therefore,
compelling my reader to force the sense out of the text for himself, an effort that Ross may do well to spare his reader by using "what initiated a motion."

7I follow Apostle's spirit in this interpolation because it sheds so much light on this example. For example, if Florin is raided by Gilder, Florin does not make reprisals simply because of the border raids Gilder has been making, but in order to establish enough control over Gilder to bring those raids to an end. The existence of the raids is the initiating factor; but their non-existence is the motivating factor. (Recall the pilot, whose absence caused the wreck of the ship, but whose presence was the cause of safety.)

8hothen bee kinesis prooton

8I am probably dead wrong in failing to render eidie as "in look" here. This whole passage may well be an elaborate pun, which I destroy by failing to use "look" consistently. Nevertheless, fighting through Aristotle's ever-changing terminology to match the three terms in this sentence with their counterparts above will prove difficult enough for most readers, readers who might despair completely of puzzling it out if they had to contend with "look" in the first case as a cause in itself, and in the second as denoting between causes.

10Ross renders kinoumenai kinei as "things which cause movement by being themselves moved."

11Both this interpolation and the one preceding are used by Ross et al. But the interpolations are implied only by Aristotle's ideas, not by the Greek text. The reader might do
there are three separate studies: one concerning immovable things; one concerning things in motion (but which will not cease to be); and one concerning things which will cease to be.

So the "why" is brought back to the material, the essence, and the first motion. For in coming to be causes are examined mostly in this way: "What comes to be after what? What was made? And what made it?"—and always in this order.

Now, there are two principles of natural motion, of which one is not [itself] natural, since it has no principle of motion in itself. And if something causes motion but is not itself moved, then it is of this sort, such as that which is entirely immovable and is first of all things or that which is the essence and the shape (for this is the end and that for the sake of which). So, since nature is for the sake of something, it is necessary to have insight concerning [that for the sake of which]. We must bring the "why" back to all [its causes, namely:] 1) that this must result from that—either "from that" simply or "from that" as a rule; 2) that if this is to be so, then that must be so (just as the conclusion results from the premises); 3) that this was that which the essence was to be; and 4) [that all this is so] because it is better thus, not simply, but relative to the substance of each thing.
well to consider the sentence without the interpolations to see whether it could be argued that they are more misleading than helpful.

12 *pragmateiai*

13 *aphthartoon* (more consistently, "un-cease-to-be-ible")

14 *phtharta* (more consistently, "cease-to-be-ible")

15 Ross, who usually renders *ti estin* as "[the] what," here uses "form," his usual rendering for *eidos*.

16 Ross interpolates "last" here; but the clause following the questions, *kai houtoos aiei to ephexees*, implies that they are arranged to correspond to the elements of the above list (a correspondence which is hardly tenuous). Though I follow Apostle in omitting Ross' "last," I am alone in the rest of my interpretation. Charlton offers an interesting alternative: "People usually investigate the causes of coming to be thus: they see what comes after what, and what first acted and was acted on, and go on seeking what comes next." (He is also alone in his interpretation.)

17 As strange as this assertion may at first seem, there is nothing out of the ordinary about it. To take the most obvious example, millions of Jews, Christians, and Muslims believe in a God outside of nature Who nevertheless acts upon things and people through nature.

18 *panteloos akineeton*

19 *morphee* (see note 15 of B.1)
Indeed, we must explain first that nature is of the causes that are for the sake of something, and then about how necessity exists in natural things. For all writers [on nature] make reference to this cause [necessity], saying that since heat and cold and such individual things are naturally such and such, these things both are and come to be out of necessity. For even if they mention some other cause, it is only to touch on it and then goodbye, as one does with "love and strife" and another with "intellect."

But one might raise a question: What prevents nature from acting neither for the sake of something nor for what is better, but rather out of necessity?—just as it rains not in order for the crops to grow, [but out of necessity]; for what goes up must grow cold and what grows cold must come to be water and descend, while the growth of the crops comes to be coincidentally. And similarly, if grain spoils on the threshing floor, it did not rain for the sake of spoiling it, but that is merely a
I follow Ross in rendering *lekton* as "we must explain" because Aristotle seems already to have reached his conclusion, and only to be communicating it here. Apostle's "discuss" allows Aristotle more latitude, while Hope's "state" implies that his views are firmly entrenched. I cannot say which rendering is the most accurate, and follow Ross' as the one closest to—pardon the pun—the golden mean.

Ironically, Apostle renders *dioti* as "why," rather than "that," suddenly implying even more forcefully than Ross that Aristotle has made up his mind about the matter at hand. (It does not require nearly as much presumption to "explain that" something is the case as it does to "discuss why" it is.)

Ross renders *tois fusikois* as "physical problems"; Apostle as "physical things"; and Hope as "natural processes."

Rather than rendering *pantes* as "everyone," I follow Ross in using "all writers [on nature]," which only makes sense, since Aristotle obviously knows better than to assert that everyone thinks the same way about nature, and since he alludes to specific philosophers a few lines down.

I follow Ross *et al.* in rendering *huei ho Zeus* (literally, "Zeus sends rain") impersonally as "it rains," though Aristotle may be using this idiom intentionally to show 1) that it would be strange for Zeus to send rain unless it served some purpose, or 2) that necessity, as a cause, would constrain the chief god himself—perhaps an allusion to the piercing question of the
coincidental [effect]. So what prevents the parts in nature, too, from being thus? For example, teeth come in out of necessity—sharp front teeth suited for tearing, and broad molars useful for grinding the food—since they did not come into being for the sake of something, but by happenstance. And might it not be likewise concerning all other [natural] parts that seem to be taken for granted as being for the sake of something? Wherever, then, all [the parts] came into being just as if they were for the sake of something, such things were suited to survive by their automatic organization, while those
Euthyphro.

8Hope, who construes *ta meree* . . . *en teel phusei* as more intimately related to the example that follows than anyone else, uses "bodily parts" rather than "parts in/of nature."

9Perhaps "holding"--or even "behaving"--would be a better rendering of *echein* in this context. Apostle may be right in sparing his reader the effort of figuring out what Aristotle is referring to by using "coming to be."

10*anateilai* ("grow," "rise," or "bring forth")

11*epiteedeious* ("for the pursuit of" or "with the business of")

12As popular a rendering of *sumpesein* as "coincidence" is, I prefer to preserve that term for the forms of *sumbebeekos*.

13Though "taken for granted" is a legitimate rendering of *huparchein*, and is here dictated by context, I should point out that this is my second deviation from my usual rendering, "belong." (The first is "subsist," which I use, following Yaffe, in the definition of nature in B.1.)

14I follow Ross in construing the previous three sentences as one involved question in the Greek text, but do not follow him in translating it accordingly because such a rendering would be extremely difficult for many readers to follow. But those who delight in the style of Henry James may well benefit from seeing Ross' rendering: "Why then should it not be the same with the parts of nature, e.g. that our teeth should come up _of necessity_--the front teeth sharp, fitted for tearing the food--since they did not arise for this end, but it was merely a
not so suited perished and continue to perish, as Empedocles said of the man-headed offspring of oxen.

Such a line of reasoning, then, and others of the sort, might raise a difficulty. But it is impossible for this to be the way things are. For the examples above and all things by nature come to be in a given way either always or as a rule, while none of the things by chance or the automatic do so. It is not during the winter that it rains often by chance or
coincidental result; and so with all other parts in which we suppose there is purpose?"

15apollutai (rendered as "spoiled" in relation to grain above)

16The parallel between this passage and Darwin's principle of natural selection is striking, but apparently not striking enough for Hope, who seems to have given the passage an intentionally Darwinian slant, especially through his use of the non-Aristotelian phrase "organic structures" and the catchword of natural selection, "fitting," (a legitimate rendering of epiteedeloos, but one that makes Aristotle sound as though he is quoting The Origin of Species): "Those organic structures, then, which came into the world as if they had been produced to some end, survived because they had been automatically organized in a fitting way; all others, like the man-faced offspring of oxen in the theory of Empedocles, have perished and continue to perish." Of course, Hope might object that Darwin had Aristotle in mind when he was struck with the notion of natural selection (just as I suspect that Machiavelli was thinking of Aristotle when he compared fortuna to a woman); but since we have it from Darwin himself that his principle of natural selection was formulated while he read Thomas Malthus, such an objection would be extremely tenuous.

17I follow Hope in his liberal--but in this case, I think, inspired--rendering of logos.

18I follow Ross in rendering houtos (usually "thus") as "in a given way."
happenstance, but during the summer; nor scorching heat during the summer, but during the winter. So if, as it seems, things are either by happenstance or for the sake of something, and if such things are neither by happenstance nor by the automatic, then they must be for the sake of something. But, ironically, the very people who use the preceding argument admit that all such things are by nature. Therefore, in things that come to be and are by nature, there is something for the sake of which.

Moreover, in such things as have an end, what comes first and what comes next in order are done for the sake of [that end]. So is it not in action as it is in nature? And as it is in nature, so it is in individual actions, if nothing interferes. But actions are for the sake of something and are therefore naturally for the sake of something. For example, if a house were of the things that come into being by nature, then it would come into being just as it now does by art; and if things in nature came into being not only by nature but by art as well, then they would come into being just as they now do naturally. One action, then, is for the sake of the next. In general, art
19 suumptoomatos

This liberal distortion of context is necessary to preserve my standard rendering of dokei ("it seems"). At first, I was tempted to use the more contextually literal "So if things are supposed to be. . ." but found that my proofreaders generally took "supposed" in the sense of "should" rather than in the sense of "reckoned," (itself a rendering that I do not use here in order to avoid confusion between dokei and legei).

More literally: "If, then, things are supposed to be by happenstance or for the sake of something, then such things, if they are neither by happenstance nor by the automatic, must be for the sake of something."

"Ironically" strikes me as a very tenable rendering of meen and ge (particles of mock surprise).

Ross' rendering of this sentence, though easier to follow, is less faithful to the Greek: "Therefore action for an end is present in things which come to be and are by nature."

empodizeei (usually "hinders")

I follow the spirit of Apostle's rendering of prattetai d'heneka tou, kai pephukaen hara heneka tou. But there is something to be said for Ross' interpretation, even though it stretches in regard to the usually adjectival pephukaen: "Now intelligent action is for the sake of an end; therefore the nature of things also is so."

Charlton may be right in rendering heneka hara thaterou thateron literally as "The one, then, is for the sake of the other." But the proximity of "art" and "nature" will lead most
either imitates nature or brings to an end\textsuperscript{27} that which nature is unable to complete.\textsuperscript{28} So if artificial things are for the sake of something, then it is clear that natural things are too. For artificial and natural things are similar to each other in the relationship between the later [stages in an artificial or a natural process] and the earlier [stages in an artificial or a natural process].\textsuperscript{29}

This is most evident in those of the other animals that make things neither by art nor by experimentation\textsuperscript{30} nor by design. Hence, some people raise the question of whether such creatures as spiders and ants work by intellect or by something else. And proceeding in this way little by little, it will be seen that even in plants, that which comes to be contributes to an end—the leaves, for example, [sprout] for the sake of shading the fruit. So if it is both by nature and for the sake of something that the sparrow makes its nest and the spider its web and that plants [sprout] leaves for the sake of their fruits and [send] their roots not up but down for the sake of nourishment,\textsuperscript{31} then it is evident that there is such a cause in things which come to be and are by nature.

But mistakes come into being even in art; for a grammarian can\textsuperscript{35} write incorrectly,\textsuperscript{36} as a doctor can give [a patient] the incorrect medicine to drink. So it is clear that mistakes are possible in natural things as well. Indeed, there are some artificial things in which what is done rightly is done for the sake of something, and others in which what is attempted may be done mistakenly (though it is [still] for the sake of something,
readers to unthinkingly conclude that Aristotle means that art is for the sake of nature, which, in light of the preceding passage, is hardly likely.

27.epitelei

28.I render *apergasasthai* as "to complete."

Also, I follow Barnes' spirit in my rendering of this sentence. Ross construes the *ta men . . . ta de* construction differently: "... generally art partly completes what nature cannot bring to a finish, and partly imitates her."

29.I believe these interpolations are as helpful as they are huge, and am more satisfied with my rendering than with anyone else's—though I admit that it could stand improvement.

30.zeeteesanta

31.I render *trophees* as "food" above.

32.literally, "the latter"

33.literally, "or"

34.I am tempted to render the last part of this sentence liberally as "... the shape must be that cause for the sake of which [everything else happens]."

35."Can" seems a tenable way to render what appears to be a gnomic aorist here.

36.*ouk orthoos* ("not rightly")
except that it fails); and if [such is the case with art], then the same must hold for natural things; and the monstrosities of nature are the mistakes of that for the sake of which. 

Therefore, from the beginning, the [man-headed] offspring of oxen, in their very [bodily] organizations, if they were not able to come to a certain limit or end, must have come into being through the corruption of some principle, just as [monstrosities] now [result from corrupted] seed. Moreover, seed must have come into being first, and not straightway the animals; and by the phrase "whole-natured first," [Empedocles meant] the seed. Further, since there exists in plants something for the sake of which, though it is less distinct [in them than in animals], there is the question of whether or not, among plants, olive-headed offspring came into being from vines (just as man-headed offspring came to be from oxen). Absurd! But there must have been, if that is how it was with animals! Furthermore, even with seeds, coming to be must have been in the manner of chance. And whoever reasons thus wholly
The second if-clause in this very long hypothetical assertion has so many qualifiers that I have taken the liberty of moving the "if" from the beginning of this sentence so that it is just prior to the then-clause. A more literal rendering would be: "If indeed there are some artificial things in which what is rightly done is done for the sake of something, and if there are others in which what is attempted may be done mistakenly (but is still for the sake of something, except that it fails), then the same must hold for natural things as well."

"Thoroughly ceasing to be," a more consistent rendering of diaphtheiromenees (a prefixed form of phtheiroo), would be ridiculous here, since mutation result from defective seed, not non-existent seed.

I follow Ross; Apostle and Hope construe alla mee euthus ta zooia differently: "... and not all the animals at once."

Charlton offers a polysyllabically intriguing—and certainly an amusing—alternative for to oulophues men proota: "omnigenous protoplast."

Ross: "Moreover, among the seeds anything must have come to be at random."

Apostle: "Again, any chance thing might otherwise be generated from a seed."

Charlton: "Again, coming to be among seeds too would have had to be as luck would have it."

leegon
abolishes\textsuperscript{45} both nature and the natural.\textsuperscript{46} For such things as are natural reach a certain end by a certain principle of continuous motion in themselves, neither the same end by every principle, nor a chance end, but a given end always [by a given principle], if nothing interferes.\textsuperscript{47}

But that for the sake of which, along with that which is for the sake of something,\textsuperscript{48} may come to be by chance. For example, we say that the stranger came by chance and left after ransoming [a prisoner], as though he came for the sake of that action, though he did not come for the sake of it. This is coincidental, for chance is of the coincidental causes, as was said earlier. But when something comes to be always or as a rule, it is neither coincidental nor by chance. And natural things are always so if nothing interferes. And it is absurd to think that one thing is not for the sake of another whenever we do not see the design of the motion. Art does not design. If the ship-building art were in the wood, it would act in the same way as nature.\textsuperscript{49} So if that for the sake of which exists in art, it also exists in nature. This is most clear in the case of one who doctors himself;\textsuperscript{50} for nature is like that. It is evident, then, that nature is a cause, and one that is for the sake of something.
Apostle, construing *holoos* in a different sense, offers: "In general, he who asserts this rejects things existing by nature as well as nature itself." I follow Ross' spirit.

Perhaps I am too impressed by how easily this Greek passage translates into English to see how difficult it will be for most readers to keep "reach" in mind all the way through the sentence. For those unable to follow my rendering, I provide Ross', liberal though it is: "For those things are natural which, by a continuous movement originated from an internal principle, arrive at some completion: the same completion is not reached from every principle; nor any chance completion, but always the tendency in each is towards the same end, if there is no impediment."

I am extraordinarily tempted to follow Ross in reducing these unwieldy phrases to "end" and "means."

Another tenable rendering is: "If the ship-building art were in the wood, something similar [to a ship] would have been made by nature."

Hope offers this alternative: "This becomes especially clear when someone {without deliberation} heals himself."
And to which of the two does that from necessity belong—is it from the hypothetical [alone] or from the simple as well?¹

For what is from necessity is now thought to exist in coming to be, just as if one were to believe² that walls come into being by necessity because heavy things are naturally borne down, while light things are naturally borne to the top; hence, the foundation-stones³ are on bottom, while the bricks⁴ are above because they are lighter, with the posts⁵ on the very top (for they are the lightest). Nevertheless, a wall, even though it does not come into being without these things, still does not come into being because of them (except as its materials),⁶ but rather for the sake of sheltering something and keeping it safe. And similarly with all other cases in which there is something for the sake of which: Without having such things as are naturally necessary for [the end], it cannot come to be; however, it does not come to be because of them (except as its materials), but is rather for the sake of something. For example, why is a saw such as it is? So that it can saw and for the sake of sawing.⁷ However, if the saw is not made of iron, that which it is for the sake of is impossible. So if there is to be a saw, and if it is [to do] the work of a saw, then it must, by necessity, be of iron. Indeed, necessity is from the hypothetical, but not as an end. For necessity is in the material, while that
1I follow the spirit of Ross and Apostle, and possibly of Hope, whose spirit it is hard to make out: "In what sense, then, does anything happen 'necessarily'? 'Conditionally' {in subjection always to ends}? Or also {without any reference to ends, and thus} unconditionally?"

2The verb nomizoo is generally rendered as "recognize," and is often used in conjunction with theous to express one's—to use today's bureaucratic jargon—"theological orientation." But most English speakers, if they are daring enough to broach the topic, ask, "Do you believe in God?" not "Do you recognize God's existence?" which supports my rendering of nomizoi here.

3In the Greek, Aristotle is certainly speaking of two things: hoi lithoi . . . kai ta themelia ("stones and foundations"). But since a reader could become very distracted by trying to figure out what, besides stones, the Greeks used as foundations—"Did they pour concrete back then?"—I follow Hope in combining the two terms.

4Since Aristotle is speaking of a wall, gee ("earth") almost certainly means "baked earth"; so I follow Hope in using "bricks."

5To preserve the consistency of the wall example, I follow Charlton in rendering xula ("wood") as "posts."

6Like Barnes, I do not follow Ross, who renders huleen ("material") as "material cause."

7I render todi and toudi (loosely, "this here" and "that there") as "saw" and "sawing" because the demonstrative pronouns are not much help. I suspect that as Aristotle said this, he
for the sake of which is in the account.  

And necessity in mathematics in some way resembles necessity in things which come to be according to nature. For since a straight line is what it is, it is by necessity that the angles of a triangle are equal to two right angles—-but not the other way around. But if this is not so, neither is the line straight. But in things which come to be for the sake of something, the case is reversed. If the end either is or is to be, then what is prior [to the end] either is or is to be. But if not, then just as in the other case, when there is not a conclusion, there is not a principle, so in this case there is no end and no that for the sake of which. For this [the end] is also a principle, not of action, but of reasoning (while in mathematics, since there is no action, principles are of reasoning [only]). So if there is to be a house, it is necessary for certain things either to subsist [already] or to come into being; and, in general, it is necessary for there to be materials when there is something for the sake of which, such as bricks and stones if it is a house. But the end exists not because of these things (except as its materials); neither is it to exist because of them. Generally, however, if there are no stones, there will be no house; and if there is no iron, there will be no saw—-for in mathematics there are no principles if the triangle [does not equal] two right angles.

Indeed, it is evident that necessity in natural things is what we call the material as well as its motions. And the
either made a forward sawing gesture with the first word and a backward one with the second, or pointed to two sawn items. Ross' rendering is more faithful to the Greek: "To effect so-and-so and for the sake of so-and-so," which is not as meaningless as it may at first seem, since there are only so many things one can do with a saw.

8I follow Charlton in rendering logooi as "account." Ross uses "definition"; Apostle "formula"; and Hope, reasonably enough, "'logos.'"

8parapleesioos

10Hope's rendering, with its interpolation, may be helpful: "Thus, since a straight line is such [that it forms, together with another on which it stands, adjacent angles equal to two right angles]. . . ."

11literally, "but not because of this, the other"

12In a roundabout way, I follow Charlton's interpretation, which differs from Ross': "... though if the angles are not equal to two right angles, then the straight line is not what it is either," and from Hope's: "... although, indeed, if the 'conclusion' concerning the triangle were not so, then the straight line would not be as stated in the 'premises.'"

13literally, "there"

14literally, "here"

15Ross and Apostle disagree in their interpretation of gar, which Ross renders as "just as," while Apostle uses "whereas." I sidestep the controversy by using the traditional "for," even though it results in a more awkward reading than either of the
student of nature should speak of both causes, but especially of that which is for the sake of something (for the end is a cause of the material, but not the material of the end). And the end is that for the sake of which; and the principle is from the definition and the account, just as in artificial things: Since a house is such-and-such, certain things must, by necessity, either subsist [already] or come into being. And if health is such-and-such, certain things must, by necessity, subsist [already] or come into being. So also, if a man is such-and-such, then certain things [must be or come to be]; and if they are [to be or to come to be], then still other things [must be or come to be]. Perhaps necessity exists even in the account. For if one defines the work of sawing as a certain sort of division, this will not be if the saw does not have certain teeth, and neither will these be if it is not of iron. For even in the account there are parts which stand as the account's material.
above alternatives.

18 *mallon* (literally, "more")

17 I am baffled by Ross' rendering of *logon* as "essence."

18 Ross' rendering may well be more intelligible as well as more literal: "Similarly if a man is this, then these; if these, then those." I follow Apostle's spirit.

19 Although *logon* was "essence" for Ross a few lines above, he here renders *logooi* as "definition."
Bibliography

Texts

Translations


**Supplementary**
