

# 1

## THE DOCTRINE OF *PHYS.* II, IV-VI

– “In Aristotle we find the recapitulation of all that had been significantly said about Fortune before him, and a definition which, with its implications, contains practically all the views which will subsequently come to be entertained on the subject [sc. until the 14<sup>th</sup> century].”

– V. CIOFFARI, *Fortune and Fate*...16

### (i) *Context and method*

Aristotle's main discussion of chance is that found in Book II of the *Physics*, which may be described as an investigation into causes, as is apparent from the first sentence of chapters 1, 3, 4, 7 and 8.<sup>1</sup> Chance must be examined in a treatise on causality, since people speak of things happening 'by chance', as if chance were a cause. The atomists attributed the order in the universe to chance. Other people denied any reality to chance, and yet others held chance to be something divine and a mysterious power (θεϊόν τι οὔσα καὶ δαιμονιώτερον).<sup>2</sup> Aristotle therefore felt called upon to examine these claims in a treatise on causes.

Chapters iv-vi of *Phys.* II contain Aristotle's main discussion of τύχη and αὐτόματον. It will be argued in the next chapter that Aristotle originally wrote an account of τύχη which comprised *Phys.* II, iv-v and only at a later stage wrote the more specialised doctrine of *Phys.* II, vi. In the present chapter an attempt will be made to set out Aristotle's

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<sup>1</sup> Cf. also *Phys.* II, vi, 198 a 2.

<sup>2</sup> *Phys.* II, iv, 196 b 6-7.

final doctrine of chance, i.e. the doctrine of the three chapters. The inconsistencies that remain due to imperfect revision of II, iv-v will not be dealt with here, but will be reserved for the next chapter.<sup>3</sup>

The method adopted in this chapter is that of systematically elucidating Aristotle's own highly cryptic notes on chance in *Phys.* II, v-vi. This chapter thus constitutes a commentary on the doctrine of *Phys.* II, v-vi. A commentary on the doctrine of *Phys.* II, iv will be given in Chapter II, where it will be used at the same time to clarify the structure of *Phys.* II, iv-vi.

### (ii) Terminology

In the following account Aristotle's two terms τύχη and αὐτόματον will be retained in their Greek form for the sake of clarity. However, it is worthwhile discussing briefly the most appropriate English equivalents for these terms. In *Phys.* II, vi the best equivalent for τύχη is doubtless 'luck' (the term used by Hope, Apostle, and Charlton), since Aristotle restricts τύχη to human beings (cf. *infra* §xiv) and in English 'luck' is also only usable when referring to human beings or anthropomorphized animals. For αὐτόματον the best equivalent is undoubtedly 'chance' (Apostle's term), since αὐτόματον includes τύχη. The translations 'spontaneity' (Ross, Hardie and Gaye) and 'the automatic' (Charlton) are not used to refer to chance events in English, and it does not appear necessary to use an invented term remote from English usage to translate a term in common Greek usage. As will be seen, however, τύχη is frequently used in *Phys.* II, iv-v and in other works to refer to chance as a whole (the domain of αὐτόματον in *Phys.* II, vi) and hence cannot always be translated by 'luck'.<sup>4</sup> It would accordingly

<sup>3</sup> My aim is to avoid the danger well expressed by GRAHAM, *Aristotle's Two Systems*...291: "...the developmentalists tend to fragment Aristotle's thought, while the Unitarians try to reconcile too much."

<sup>4</sup> It is a mistake to translate τύχη by 'luck' throughout *Phys.* II, iv-vi, as do Hope, Charlton and Apostle. However, it is equally incorrect to translate τύχη by 'chance' in *Phys.* II, vi, as does LACEY, *Philoponus, On Aristotle's Physics 2*. Cf. *infra* this chapter n. 135, Ch. 2, B, pp. 69-70 and Ch. 1 *passim*. FLEET, *Simplicius, On Aristotle's Physics 2*... incorrectly translates τύχη by 'luck' throughout *Phys.* II, iv-vi (although he anomalously translates τύχη by 'chance' at II, iv, 196 b 4). He regularly translates αὐτόματον by 'chance', but incorrectly translates ἀπὸ τοῦ αὐτομάτου at 196 a 34 as 'from luck'. He translates εὐτυχία (good fortune) by 'a godsend' and δυστυχία (bad

appear most appropriate to translate τύχη by 'chance' when it is used to cover all of chance and by 'luck,' when it is restricted to chance in the domain of human action (as laid down in *Phys.* II, vi). The translation of τύχη will be examined in greater detail and some further nuances of meaning between these Greek and English terms will be discussed *infra* §xiv on *Phys.* II, vi.

The translation of αὐτόματος and the terms referring to spontaneous generation will be discussed briefly in §xiv of this chapter and in detail in Ch. 5(c)(i). The expression ἀπὸ τύχης καὶ τοῦ αὐτομάτου and related expressions will be examined in Ch. 3(b)(i).

The term σύμπτωμα in Aristotle sometimes means 'that which coincides or accompanies,' in the same way as a coincidence in English can also refer to that which coincides without any implication of chance.<sup>5</sup> However, the term σύμπτωμα is also used by Aristotle to refer to a coincidence in the sense of a chance event, as in English.<sup>6</sup> It will be seen that for Aristotle a chance event or chance concurrence or coincidence is caused by an unusual accident inhering in a *per se* cause. Hence for Aristotle a coincidence (σύμπτωμα) is due to an accident (συμβεβηκός).<sup>7</sup>

(iii) *Only unusual occurrences come about by chance*

Aristotle starts out in his argument about chance in *Phys.* II, v from his distinction between usual and unusual occurrences. Some things occur always in the same way and necessarily (e.g. day always follows night) and some things occur for the most part (e.g. for the most part it is hot in summer and cold in winter, but there are exceptions).<sup>8</sup> Aristotle notes, on the basis of linguistic usage, that we do not say that something that occurs always or for the most part in the same

fortune) by 'a disaster' at 197 a 26-27, but translates εὐτυχία by 'good luck' at 197 b 4, 8 and εὐτυχείς at 197 b 10 by the strange phrase 'good chance'.

<sup>5</sup> Cf. e.g. *Top.* IV, v, 126 b 37, 40; *De An.* III, xii, 434 a 32; *Hist. An.* VIII, xxxvii, 620 b 35; xl, 626 a 29 (where συμπτώματα are the equivalent of 'circumstances'). Cf. e.g. the term 'coincidence' in the title of Ch. 4(a)(x) of this volume and many other passages, where coincidence means merely 'coinciding'.

<sup>6</sup> *Phys.* II, viii, 199 a 1-5 (passage examined *infra* Ch. 3(a)), pp. 87-8; *Rhet.* I, ix, 1367 b 25; *Pol.* II, xxi, 1274 a 12; V, iv, 1304 a 1; V, vi, 1306 b 6-12.

<sup>7</sup> Cf. *Met.* N(XIV), vi, 1093 b 17.

<sup>8</sup> Cf. *De Int.* 19 a 20-22.

way occurs 'by chance'.<sup>9</sup> But there are unusual occurrences.<sup>10</sup> Aristotle declares, then, against those who claim that there is no such thing as chance (τύχη),<sup>11</sup> that because everyone uses the term it must have some real status or meaning.<sup>12</sup> This is a fundamental aspect of his dialectical method.<sup>13</sup> Since people use the term 'chance' to refer to certain unusual occurrences, the term must have some content relating to reality and be applicable to these unusual occurrences for some reason.

(iv) *Chance refers to events*

Having established that chance is a term used to refer only to unusual occurrences, Aristotle, in his argument in *Phys.* II, v, then turns to another aspect of chance, namely its relationship to purpose or finality. Firstly, however, it is necessary to establish that Aristotle is referring at this point to events, not substances, as the outcome of chance. If he were not referring to events, he would be contradicting his metaphysical theory, as will be seen.

<sup>9</sup> *Phys.* II, v, 196 b 10-13, 196 b 20; 197 a 19-20, 32; *De Cael.* I, xii, 283 a 32 - 283 b 1 (this passage is examined *infra* Ch. 3); *Gen. et Corr.* II, vi, 333 b 3-7 (this passage is also examined *infra* Ch. 3); *APo.* I, xxx, 87 b 19-27 (passage also examined *infra* Ch. 3); *EE* VIII, ii, 1247 a 31-3 (passage examined *infra* Ch. 7(a)); *Rhet.* I, x, 1369 a 32 - b 5 (passage examined *infra* Ch. 3). Cf. *Top.* II, vi, 112 b 1-20. Cf. FREELAND, *Accidental Causes...56*: "The key feature of the accidental is that it is not regular or predictable." Van AUBEL, *Accident, catégories et prédicables...398* incorrectly holds that events that occur unusually are identical with events that occur by chance, whereas in fact the latter are a subset of the former – cf. *infra* §vi.

<sup>10</sup> *Phys.* II, v, 196 b 13-14; *Met.* E(VI), ii, 1027 a 16-17.

<sup>11</sup> *Phys.* II, iv, 195 b 36 - 196 a 11. On the translation of τύχη in this passage cf. Ch. 2, p. 66.

<sup>12</sup> *Phys.* II, v, 196 b 13-15: ἔστι τι (196 b 15); II, iv, 196 a 11-17; *EE* VIII, ii, 1247 b 3: ἀλλ' ἀνάγκη καὶ εἶναι καὶ αἰτίαν εἶναι. Cf. *infra* Ch. 7(a) p. 240 and n. 14. In 196 b 13-15 it is to be noted that Aristotle argues that because everyone (πάντες) says that certain things occur due to τύχη, therefore there must be such a thing as τύχη and ταῦτόματον. Thus the distinction between τύχη and ταῦτόματον is carefully slipped in. It will be seen *infra* Ch. 2 that it appears likely that ταῦτόματον was inserted here during a revision of the chapter.

<sup>13</sup> Cf. *Top.* I, i, 100 a 29-30, 100 b 21-23; I, ii, 101 a 34 - 101 b 4 and my book *Gott und Θεωρία...15-19*; also *Phys.* II, v, 197 a 11-12: πάντα γὰρ ταῦτα ὀρθῶς λέγεται, εὐλόγως.

The apparent problem arises when Aristotle writes in 196 b 17-18: τῶν δὲ γιγνομένων τὰ μὲν ἕνεκά του γίγνεται, τὰ δ'οὐ, literally “of things that come to be some come to be for a purpose and others do not.” In 197 a 35 Aristotle again refers to “those things which occur for a purpose”, implying that some things do not occur for a purpose. It is not immediately clear what ‘things’ do not come to be for a purpose. Normally speaking one would expect Aristotle to be referring to substances. But it is known that for Aristotle no substance comes to be without a purpose. Aristotle also cannot be referring to accidents, since they do not have an existence of their own and cannot come to be.<sup>14</sup> Hence one is confronted with a difficulty. However, the solution appears to lie in the fact that Aristotle is referring to events, which may be viewed as coincidences, as the context indicates. Hence Ross’ regular translation in this passage of the neuter plural by ‘events’ seems justified.<sup>15</sup> Thus, if Aristotle is understood to mean that “of events that come to be, some come to be for a purpose and others do not”, there is no longer any difficulty of interpretation.

*(v) Some events are meaningful and others are not*

It was seen in the last section that Aristotle writes: “of events that come to be, some come to be for a purpose and others do not” (196 b 17-18). This statement requires further explicitation. By this statement Aristotle means that some events are meaningful to man, whereas others are not. Implicit in his observation is the fact that human beings are at all times attempting to understand events and discover their meaning for their own purposes. Because human beings are constantly on the lookout for events (occurrences, associations) that are meaningful, they develop a trained “eye” for the meaningful and pay no attention to what is not meaningful. One might compare the situation of the chess-player who never examines more than a very limited number of possible moves in a game of chess, because he

<sup>14</sup> Cf. *infra* Ch. 8(b)(ii) p. 290.

<sup>15</sup> ROSS, *Aristotle's Physics...*353, 517-8. THEMISTIUS, *In Phys.* II, 50, 18-20, PHILOPONUS, *In Phys.*, and SIMPLICIUS, *In Phys.* totally misunderstood the passage. It may be noted that the term τύχη is also found in the plural in the meaning of accidental events. Cf. *Pol.* V, iii, 1303 a 3; *NE* I, x, 1100 b 20.

knows from experience that there is no point in examining the vast majority of possible moves, as these will not help him win the game.

Thus Aristotle points out in *Met.* E(VI), ii that the number of accidents pertaining to any substance is indefinitely large.<sup>16</sup> Most purposeless events or coincidences are never even observed by man, since they are irrelevant, i.e. lacking in meaning, precisely because they have no connection with purpose.<sup>17</sup> As examples of this kind Aristotle gives the coincidence of someone regaining his health and having his hair cut, or again the coincidence of someone washing himself when a solar eclipse is taking place.<sup>18</sup> It cannot be said that there is any connection between these events, as one cannot lead to or have any relevance to the other. For this reason also it will be seen that one cannot say that they are due to chance.

One of Aristotle's most profound observations is that intelligibility and purpose go together. He states e.g. that "if someone said that he had washed himself in vain (μάτην) because the sun did not go into eclipse, he would be ridiculous. Solar eclipses are not what washing is for (ἔνεκα)" (197 b 27-29). If there is no potential connection of purpose between two occurrences, it is absurd, i.e. meaningless to connect them. Indeed, one would declare the individual who said that he

<sup>16</sup> *Met.* E(VI), ii, 1026 b 7; *Phys.* II, v, 196 b 28-29.

<sup>17</sup> Cf. CHARLTON, *Aristotle's Physics, Books I and II*...106-7: "We ascribe a thing to chance only if we think it remarkable, and it is doubtful whether we should think a thing remarkable, doubtful whether we should even notice it or be able to pick it out from the rest of our environment, if it did not seem to us, at least in a weak sense, such as to be for something."

<sup>18</sup> *Phys.* II, v, 197 a 21-25; II, vi, 197 b 27-29. The purpose of these examples seems to escape CHARLTON, *Aristotle's Physics, Books I and II*...108-9. Likewise in *APr* I, xiii, 32 b 10-13 Aristotle gives the example of the coincidence that an animal is walking when an earthquake takes place. In her account of chance CRAEMER-RUEGENBERG, *Die Naturphilosophie*...53 holds the seemingly unfounded view that Aristotle did not recognise that chance events are brought about by *per se* causes. She also thinks that chance events are due to ignorance of future meetings of causal chains (cf. the view of Mill), which, if they were known, would enable us to predict the event (and eliminate 'chance'), and that Aristotle failed to see this point. But Aristotle does not accept this view and is making a different point, namely that chance events are essentially unpredictable, because the number of accidents of every *per se* cause is unlimited and hence their interaction with other *per se* causes, which leads occasionally to a meaningful and unusual, i.e. a chance event, could never be calculated. Cf. *infra* Ch. 8(b)(ii).

had washed himself in vain because the sun did not go into eclipse to be not merely ridiculous, but mad, because he was not obeying or was indeed endangering a fundamental trait of human nature, which is to seek to understand events, i.e. to interpret them in such a way as to make it possible to promote the achievement of one's goal in life.

Closely related to this observation is Aristotle's statement of principle: "Of events that come to be, some come to be for a purpose and others do not. Of the former some are the kind of thing one would choose [i.e. an outcome of διάνοια] and some are not [events that occur due to nature], but both are among events that are for a purpose [i.e. meaningful]...Those things that are for a purpose are either what might have been done due to thought or have been the outcome of nature."<sup>19</sup> For Aristotle all natural substances have a purpose.<sup>20</sup> It is not just that they give the impression of having a purpose, as has been claimed.<sup>21</sup> For Aristotle intellect is not a prerequisite of purpose, but

<sup>19</sup> *Phys. II, v, 196 b 17-22*. For LENNOX, *Aristotle on Chance...* 52-3 there is a problem in Aristotle's statement that "those things that are for a purpose are either what *might* have been done due to thought or have been the outcome of nature", since he holds that Aristotle's doctrine of teleology is represented by "what *is* done by thought or nature." However, the problem is only apparent, since (i) whatever occurred in such a way that it might have been done due to thought or have been the outcome of nature has as a *per se* cause that which *was* done due to thought or nature (this view is that of Porphyry *ap. Simplic. In Phys.* 336, 27-29), and (ii) that which *was* due to thought or nature results not in the end aimed at, but in another end which *might* have been due to thought or nature, because of a meaningful coincidence. Thus Lennox, *ibid.*, 60 concludes seemingly without foundation that "chance processes [a confusing expression meaning *per se* causes of chance events] are for the sake of their results [chance outcomes] only in the causal sense." The truth would appear to be the reverse. They are *not* for the sake of their results, but *are per se* causes thereof coincidentally. It will be seen *infra* §(viii) that chance is *not* for a purpose, but pertains to the area of that which is for a purpose, i.e. is that which *might* have been done for a purpose, but *was not*.

<sup>20</sup> This point will be seen to be important in regard to spontaneously (i.e. unnaturally) generated natural substances (*infra* Ch. 5).

<sup>21</sup> Ross, *Aristotle's Physics...*518: "Aristotle's whole conception of the general course of nature as being ἐνεκά του, though not κατὰ προαίρεσιν or διάνοιαν (see the contrast in 196 b 18-22), is the conception of merely 'de facto teleology', that in which results that were not aimed at yet present the appearance of having been aimed at." Likewise, WIELAND, *Die aristotelische Physik...*271-2: "Man wird enttäuscht werden, wenn man in der aristotelischen Analyse mehr als den Nachweis sucht, daß wir die Begrifflichkeit von Zweck und Worumwillen, die wir schon immer



subsequent to it. The outcome of thought is not merely parallel to the working of Nature, but posterior to it. Art imitates Nature.<sup>22</sup> This observation is of capital importance. Thus the human experience of thinking and of acting for a purpose provides a privileged access for man to the kind of thing that Nature is doing for a purpose without the use of reason. But more than that: when man thinks and acts, e.g. when a doctor applies medicine, he is imitating and completing that which Nature does anyway without reason. Thus reason does no more than enable man to imitate and improve upon the workings of Nature, which are aimed at a goal. All thought is orientated towards man's goals and aims in life. But *vice versa*, as Aristotle points out, whatever occurrences cannot be interpreted as relevant to the pursuit of goals and aims, are meaningless.

*(vi) Chance events are both unusual and meaningful*

Aristotle writes in *Phys.* II, v: "Of events that come to be, some come to be for a purpose and others do not...so that it is clear that among events which are neither necessary nor usual there are also some to which purpose may be attributed" (196 b 17-21). This statement is, of course, strictly a *non sequitur*, since logically it could be that purpose could only be seen in those events that occur always or usually and that unusual events were meaningless.<sup>23</sup> Nonetheless, Aristotle is, of course, right that "among events which are neither necessary nor usual there are also some to which purpose may be attributed." Hence he should have simply referred to linguistic usage or empirical observation

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in der gewöhnlichen Redeweise anwenden...auch auf das natürliche Geschehen anwenden dürfen...Für Aristoteles ist die Zweckkategorie ein äußerst nützlichem Hilfsmittel der Forschung. Verborgene zielstrebig wirkende oder unbewußt schaffende Kräfte haben für ihn dagegen bestenfalls metaphorische Bedeutung..."

<sup>22</sup> *Phys.* II, ii, 194 a 21-22; II, viii, 199 a 15-17; *Protrep.* B13 DÜRING.

<sup>23</sup> GIARDINA, *I fondamenti...* 194-7, 297-8 has observed the difficulty of the passage and laudably attempts an original solution, namely that τούτων δὲ in 196 b 18 refers to 'the latter', not 'the former'. However, it is not possible that Aristotle held that of events without a purpose (e.g. someone washing himself when a solar eclipse is taking place) some are the kind of thing one would choose. Furthermore, chance pertains to the area of that which *is* for a purpose, as Giardina admits, *ibid.* 198 (cf. *infra* §viii). It is also not possible that the phrase τὰ δ' οὐ (196 b 18) means of things "that do not come into being according to regular teleology", as she holds (*ibid.* 297).



his statement that there are events which are neither necessary nor usual, but which nonetheless appear meaningful. It is a simple fact that some members of the set of events that occur unusually also appear meaningful. It is these that we call chance events. Whenever something that might have occurred or been done for a purpose comes about unusually, i.e. by coincidence, that is, due to an unusual accident (κατὰ συμβεβηκός) that is meaningful, it is said to occur by chance.<sup>24</sup>

(vii) *Chance is a cause*

One of the most striking and difficult aspects of Aristotle's analysis of chance is that he holds that chance (τύχη) is a cause.<sup>25</sup> The reason why he does so is no doubt because of his dialectical method, according to which there must be at least an element of truth in the views of the many and the wise. In *Phys.* II, iv he had noted that the many as well as both Empedocles and the atomists (among the wise) attributed certain events to chance. His immediate reason for holding that chance is a cause (as shown by γὰρ in 196 b 24) is the phrase ἀπὸ τύχης (196 b 23-24) "by chance", which implies that chance is a kind of agent. Aristotle accordingly holds that chance is a cause. However,

<sup>24</sup> *Phys.* II, v, 196 b 21-24; 196 b 29-33; 197 a 12-13; Cf. *Met.* Δ(V), xxx, 1025 a 14-19; *Met.* E(VI), ii, 1027 a 7-8; *Phys.* II, v, 197 a 5-8. In the last-mentioned passage, however, Aristotle has restricted the meaning of chance (τύχη) to his own interpretation thereof, namely luck, i.e. chance in the area of human free action only, i.e. to those actions which could have resulted from choice (προαίρεσις). MATTHEN, *The Four Causes...*178 writes: "Finally, it is the central point of Aristotle's analysis of the concept of chance, in *Physics* II, 5...that a process may be comparable to that which is end-directed inasmuch as it serves the same good, but may still come about by undirected causes. A fortuitous sequence of events is not end-directed..., but it may serve some good. It follows that a fortuitous process is not directed towards good even if it serves it." Matthen's view also appears unfounded, although it differs from that of Lennox (n. 19 *supra*). The causes that cause chance events *are* end-directed, but are directed at an end *other* than the chance outcome. The expression "a fortuitous sequence of events" should properly be reserved for a series of chance outcomes that lead to a further chance outcome, e.g. a man got a job, because one person died, another resigned due to a scandal, and a third got a job elsewhere. The expression "a fortuitous process" is misleading, since there is nothing fortuitous in the action of *per se* causes until they coincide with the unusual category that produces the chance outcome. Cf. *infra* §(ix).

<sup>25</sup> *Phys.* II, v, 196 b 12.

he then proceeds to explain it as a cause of a kind that neither the many nor the wise had understood properly.

In order to explain chance as a cause, Aristotle makes use of a distinction between a *per se* (*kath' hautō*) cause (a cause in virtue of itself or intrinsically with the status of a substance) and a so-called 'accidental cause'.<sup>26</sup> The phrase '*per se* cause' ('fundamental' or 'basic' cause) refers to the essential cause.<sup>27</sup> Aristotle states that there is only one *per se* cause e.g. of a house, whereas there is an indeterminately large number of accidental causes.<sup>28</sup> There can only ever be one 'fundamental' or 'essential' or 'primary'<sup>29</sup> cause of a reality, e.g. the fundamental or *per se* cause of a statue is a sculptor.<sup>30</sup> For Aristotle the two fundamental or *per se* causes in the universe (i.e. causes in their own right) are Nature and intellect.<sup>31</sup> Both of these act as efficient causes. The fact that intellect (here: human decisions) always acts as an efficient cause, does not require explanation. While the term 'Nature' can refer to all four causes, Nature, when it acts (which is what interests us when we speak of causes), does so as an efficient cause: thus the (*per se*) cause of the child is the father.<sup>32</sup>

<sup>26</sup> *Phys.* II, v, 196 b 24-27.

<sup>27</sup> Cf. *Met.* Z(VII), iv, 1029 b 13-14: ἐστὶ τὸ τί ἦν εἶναι ἐκάστω ὃ λέγεται καθ' αὐτό. Again, the essence belongs to all things, the account of which is a definition (*Met.* Z(VII), iv, 1030 a 6-7). Essence belongs to nothing except species of a genus (*Met.* Z(VII), iv, 1030 a 11-12). Essence belongs either only to substances, or especially and primarily (πρώτως) and simply (ἀπλῶς) (*Met.* Z(VII), v, 1031 a 12-13). On the meaning of *per se* cf. also *APo* I, iv, 73 a 34 - 73 b 24. Cf. also the illuminating account of *per se* causes in CHARLES, *Aristotle on Meaning and Essence...*255-62.

<sup>28</sup> *Phys.* II, v, 196 b 27-28: τὸ μὲν οὖν καθ' αὐτὸ αἴτιον ὀρισμένον, τὸ δὲ κατὰ συμβεβηκὸς ἀόριστον; 197 a 14-18. Cf. Ross, *Aristotle's Physics...*519: "A result B has one definite cause A; but A may have an indefinite number of concomitants..."

<sup>29</sup> Cf. *Met.* Z(VII), iv, 1030 a 22 and 1030 b 5: πρώτως. FREELAND, *Accidental Causes...*55 translates '*per se*' cause by 'intrinsic cause' and 'proper cause'; SAUVÉ MEYER, *Aristotle, Teleology and Reduction...*798 by "cause in virtue of itself, or intrinsically (*kath' hautō*)."

<sup>30</sup> *Phys.* II, iii, 195 b 26-27; 195 b 21-22: δεῖ δ' αἰεὶ τὸ αἴτιον ἐκάστου τὸ ἀκρότατον ζητεῖν... The *per se* cause is particular, rather than generic. Cf. FREELAND, *Accidental causes...*55.

<sup>31</sup> *Phys.* II, vi, 198 a 5-13. On Nature and intellect cf. *infra* this chapter, section (xvii).

<sup>32</sup> *Phys.* II, iii, 194 b 30-31; *Phys.* II, vii, 198 a 26-27; *Met.* Z(VII), vii, 1032 a 25; *Met.* Δ(V), ii, 1013 a 29-32.

The formal and final causes are transformed into an efficient cause in order for Nature (i.e. all natural beings) to act.<sup>33</sup> It may therefore be said that a *per se* cause acts as an efficient cause.<sup>34</sup> An accidental cause, on the other hand, is not one of the four causes.<sup>35</sup> An accident

<sup>33</sup> *Phys.* II, vii, 198 a 23-26. The *per se* cause of e.g. a tripod falling in such a way that one could sit on it would otherwise be a final cause (for this example of a chance event cf. *infra* this chapter, §(ix)). Cf. also *infra* Ch. 5(d)(ii), p. 194 and n. 131; Ch. 5(c)(ii). For Aristotle, an efficient cause is normally a concrete substance, as pointed out by WIELAND, *Die aristotelische Physik*...266 (transl. in BARNES, SCHOFIELD, SORABJI, *Articles on Aristotle*...Vol. I, 150). SORABJI, *Necessity, Cause and Blame*...42-3 has perspicaciously pointed out what appears to be a more liberal use of the efficient cause to cover (a) the form (e.g. *Part. An.* I, i, 641 a 25-28) or (b) an event, such as a border raid (e.g. *Phys.* II, vii, 198 a 19; *APo* II, xi, 94 a 36), or (c) the art as cause of an artefact (*Phys.* II, iii, 195 a 5-8, b 24), or (d) hard work as the cause of fitness (*Phys.* II, iii, 195 a 9-11). In the case of (a), the form (or final cause) is always transformed into an efficient cause, in order for it to operate. Thus the form *qua* form is not an efficient cause. In the case of (b) an event, such as a border raid, I would argue that Aristotle never loses sight of the fact that a border raid is an abstraction and that the real cause is men (attacking). In the case of (c) I believe that the art is only an efficient cause when applied by a man, who is the concrete efficient cause (in 195 b 23-4 Aristotle writes that it is the builder who builds *according to* the art of building.), and likewise in the case of (d), hard work by man causes the fitness of a man.

<sup>34</sup> It is to be noted that for each of the four causes of a reality, Aristotle considers that there is one "proper" cause, i.e. cause that is stated most appropriately (τὰ οἰκείως λεγόμενα, *Phys.* II, iii, 195 b 3; *Met.* Δ(V), ii, 1014 a 7; cf. *Met.* Η(VIII), iv, 1044 b 1-2: τὰ ἐγγύτατα αἴτια). Thus the proper efficient cause of health is a doctor, whereas the term "expert" as a substitute for "doctor" is an accidental cause. The proper material cause of a statue is bronze, whereas "a soft yellowish metal" would be an accidental cause replacing the proper material cause. The proper formal cause of an octave is the ratio 2:1, whereas "number" is an accidental cause. It has been held, e.g. by APOSTLE, *Aristotle's Physics*...211 n. 26 (and the translation pp. 30, 33), that the "proper cause", which Aristotle contrasts with accidental causes, is identical with the "*per se* cause", which he also contrasts with accidental causes. However, this is highly questionable, since there is only one *per se* (i.e. essential and primary) cause of each reality. Aristotle also does not speak of the *per se* cause in any other context except that of efficient causality. The *per se* cause is rather to be understood as just one of the four proper causes, namely the proper efficient cause.

<sup>35</sup> *Phys.* II, iii, 195 a 26 - 195 b 6; II, v, 196 b 24-29. At a later date Alexander of Aphrodisias referred to the *per se* cause as the προηγουμένη αἰτία (*De Fato* 173.14) or the προηγουμένη τε καὶ κυρίως αἰτία (*De Fato* 174.28). Cf. also the remarks of DOOLEY, *Alexander of Aphrodisias, On Aristotle Metaphysics 5*...184, n. 605. For a detailed discussion of the meaning of προηγέσθαι and προηγούμενος cf. SHARPLES, *Responsibility, Chance and Not-Being*...49 and notes.

cannot act as one of the four causes, and thus there can be no e.g. accidental efficient causes or accidental final causes, because an accident has no existence on its own, even if it is spoken of as causing when it inheres in a substance.<sup>36</sup>

Aristotle explains what he means by an accidental cause with the aid of examples. The substantial or essential – literally *per se* – cause of a house is the builder (literally τὸ οἰκοδομικόν, “that which is skilled in building” or “can build”, which means ‘the builder’, not ‘that which can build in the builder’<sup>37</sup>) and of the statue the sculptor. The accidental cause of the house or of the statue (κατὰ συμβεβηκός, 196 b 26-27, 195 b 4) is (the fact that the builder or the sculptor is) ‘fair-skinned’ or ‘a musician.’<sup>38</sup> Instead of saying that the builder built the house, one could say that a fair-skinned man or a musician built the house. But the proper (καθ’ αὐτό) efficient or determinate cause (αἴτιον ὠρισμένον, 196 b 28) of the house is a builder. All of the unlimited number of substitutes for the term ‘builder’ (such as a fair-skinned man or a musician) are accidental (or coincidental) causes, since they are merely accidents (or coincidental properties) of the *per se* cause.<sup>39</sup>

It is to be noted that Aristotle maintains that such accidental causes can be spoken of as able to cause or as actually causing.<sup>40</sup> In reality, however, no accident is ever a real (substantial) or *per se* cause, and hence Ross rightly holds Aristotle’s view to be a *façon de parler*.<sup>41</sup> In

<sup>36</sup> Cf. also *infra* this chapter nn. 53, 54 and Ch. 8(b)(ii).

<sup>37</sup> The phrase τὸ οἰκοδομικόν has frequently been translated by “the housebuilding faculty” (Hardie and Gaye, Barnes), “the art of building” (Apostle, Carteron), “die Fähigkeit, ein Haus zu bauen” (Zekl, Wagner). CHARLTON, *Aristotle’s Physics, Books I and II*...translates correctly: “that which can build.” Cf. Plat. *Resp.* I, 333b; Plot. *Enn.* I, vi, 3. For the “art of building” Aristotle uses the term οἰκοδομική in *Phys.* II, iii, 195 b 24. On such expressions as τὸ λευκόν, τὸ μουσικόν, cf. WHITE, *Aristotle on Non-Substance*...111-9.

<sup>38</sup> *Phys.* II, v, 196 b 24-27; 197 a 14-15; II, iii, 195 a 32 - b 6.

<sup>39</sup> It is to be noted that the *per se* cause could also be replaced by its genus or a *proprium*, e.g. a living being built the house (cf. *Phys.* II, iii, 195 b 1). But this kind of accidental cause is not relevant to the discussion of chance. However, it should be noted that an ‘accidental’ cause might more accurately be called a ‘coinciding cause’, since for Aristotle every property that coincides with a *per se* cause is a so-called ‘accidental’ cause.

<sup>40</sup> *Phys.* II, iii, 195 b 3-6.

<sup>41</sup> Ross, *Aristotle’s Physics*...519. In *De An.* II, vi, 418 a 7-25 Aristotle distinguishes in a parallel way between the proper (καθ’ αὐτά) objects of a sense and accidental

contemporary terms, the only way in which an accident may be associated with anything causal (which for Aristotle must be a substance or that which is assimilated to a substance) is in a 'derived' way.

For Aristotle, accordingly, it is possible to retain the notion that chance is a cause, provided that one understands it as an accidental cause under the terms of his own metaphysics. His application of accidental causality to the notion of chance will be examined in the following sections.

*(viii) Chance is an accidental cause that is meaningful*

In *Met.* Δ(V), xxx Aristotle defines the term συμβεβηκός, firstly, as an attribute (ὁ ὑπάρχει...τινι) that is predicated neither always nor usually, e.g. the fact that a musician is fair-skinned, where most musicians are not fair-skinned.<sup>42</sup> Similarly, he defines τὸ συμβεβηκός in *Met.* E(VI), ii, 1026 b 31-37 and *Met.* K(XI), viii, 1064 b 32 - 1065 a 6 as occurring neither always nor usually.<sup>43</sup> Aristotle is speaking, therefore, of an *unusual* accident in these passages, and not just of an accident in general, as the translators presume.<sup>44</sup> In this chapter on

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(κατὰ συμβεβηκός) objects of sense. Proper objects of a sense are e.g. colour for sight, sound for hearing, whereas an accidental object of a sense is e.g. Diare's son as the object of sight (the proper object being whiteness). It should be noted, however, that Aristotle is analysing objects of sense *qua* objects of sense. Of course the essence of the object seen is Diare's son and not just whiteness, once one shifts attention away from the object of sense *qua* object of sense.

<sup>42</sup> *Met.* Δ(V), xxx, 1025 a 19-21. "Fair-skinned" rather than "pale" (CHARLTON, *Aristotle's Physics, Books I and II...30*) or "white" (TREDENNICK, *Met.*, GÓMEZ-LOBO, ΣΥΜΒΕΒΗΚΟΣ...107; HEIDEL, *The Necessary and the Contingent...26*; MILHAUD, *Le hasard chez Aristote...670*) appears to be the correct translation of λευκός. WEISS, *Kausalität und Zufall...159* translates by "eine helle Hautfarbe." FLEET, *Simplicius, On Aristotle Physics 2...97* (and elsewhere) rightly translates λευκός by 'fair-skinned'.

<sup>43</sup> On *Met.* E(VI), ii cf. *infra* Ch. 4(a)(xiii).

<sup>44</sup> An accident in general is whatever attribute is not part of the essence of a substance: τοῦτ' ἂν γὰρ διώρισται οὐσία καὶ τὸ συμβεβηκός· τὸ γὰρ λευκὸν τῷ ἀνθρώπῳ συμβέβηκεν, ὅτι ἔστι μὲν λευκὸς ἀλλ' οὐχ ὅπερ λευκόν (*Met.* Γ(IV), iv, 1007 a 31-33). Likewise *Top.* I, v, 102 b 4-26; I, viii, 103 b 17-19; IV, i, 120 b 34-35. In *Top.* a συμβεβηκός includes both usual and unusual accidents, but excludes a proprium (ἴδιον). But in *Met.* Δ(V), xxx a συμβεβηκός is either an *unusual* accident or a proprium (also referred to as a συμβεβηκός καθ' αὐτό both here and in e.g. *APo* I, vi, 75 a 19; I, vii, 75 b 1; I, xxii, 83 b 19-20; *Phys.* II, ii, 193 b 27-28; III, iv, 203 b 33; *Met.*

τὸ συμβεβηκός (*Met.* Δ(V), xxx) Aristotle does not treat of the *usual* accident that is not a proprium, e.g. the blue-eyed musician, where most musicians have blue eyes.

When he deals with accidental causes in *Phys.* II, iii Aristotle does not restrict them to those that neither always nor usually inhere in a *per se* cause. All concurrent or coincidental causes are accidental causes. Thus if one says that a house was built by a fair-skinned man or a musician, the fair-skinned man or the musician is an example of an accidental cause. But if one says that the statue was sculpted by a man or by a living being, that is also an example of an accidental or rather a concurrent cause,<sup>45</sup> as it is the sculptor *qua* sculptor who is the cause.

An accidental cause is a concurrent cause, but not necessarily a chance cause. Thus it makes no sense to say that the builder was a musician by chance, where there is no connection between building a house and playing music (cf. §(v) *supra*). For an accidental cause to be a chance cause, it must not only be unusual, but also be meaningful, i.e. belong to the area of that which is for a purpose.<sup>46</sup> This is the second criterion of a chance event examined *supra* §(vi).

Thus all chance occurrences are due to a coincidence (concurrency), but not all concurrences (accidents coinciding with *per se* causes) can be called chance occurrences, since there are an indefinite number of concurrences that are not contrary to expectation, i.e. that are not meaningful to man and therefore do not qualify as chance occurrences. It so happens that Aristotle, in giving examples of the meaning of a [sc. unusual] accident in *Met.* Δ(V), xxx, chooses mainly chance occurrences (not, however, in the case of the musician who is fair-skinned).<sup>47</sup> The definition of a [sc. unusual] accident (συμβεβηκός) given by Aristotle in *Met.* Δ(V), xxx is the same as that of a chance event except that it is not limited by the requirement

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B(III), i, 995 b 20; B(III), ii, 997 a 20). An examination of the implications of these differences is beyond the scope of this volume. For the sake of clarity I have added the term 'unusual' in square brackets before the term 'accident' in order to distinguish unusual accidents from usual accidents, since the distinction is important. It is dealt with further in Ch. 4(a)(xiii). In his severe criticism of Aristotle's theory of accidents, HEINAMAN, *Aristotle on Accidents...*317 has not taken account of these differences. On *propria* cf. further URBANAS, *La notion d'accident...*103-8.

<sup>45</sup> *Phys.* II, iii, 195 a 32 - 195 b 12.

<sup>46</sup> *Phys.* II, v, 196 b 29-30.

<sup>47</sup> Cf. WIELAND, *Die aristotelische Physik...*259.



of unexpected meaningfulness, which is the additional characteristic that makes chance a subset of the coincidental.<sup>48</sup>

It is of fundamental importance to recognise that for Aristotle only substances and human decisions have a purpose.<sup>49</sup> Substances and human decisions are efficient causes and Aristotle considers human decisions therefore to be parallel to substances.<sup>50</sup>

Accidents, therefore, do not have a purpose. Hence Aristotle states that chance, i.e. chance events, does not occur for a purpose. This tenet is stated very clearly in a series of texts outside the *Physics*.<sup>51</sup> However, careful examination shows that it is also the doctrine of *Phys. II*. Aristotle states that chance (τύχη) is τῶν ἔνεκά του, i.e. pertains to the *area* of that which is for a purpose, i.e. the meaningful.<sup>52</sup> But chance

<sup>48</sup> *Met.* Δ(V), xxx, 1025 a 14-15: Συμβεβηκὸς λέγεται ὁ ὑπάρχει μὲν τιμὴ καὶ ἀληθὲς εἰπεῖν, οὐ μὲντοι οὐτ' ἐξ ἀνάγκης οὔτε <ὡς> ἐπὶ τὸ πολὺ... For chance as a subset of the coincidental cf. also *infra* Ch. 4(xii). In Δ, xxx Aristotle also gives a definition of a second meaning of the term "accident" which is not relevant to the discussion of chance, namely that of so-called eternal accidents, i.e. propria.

<sup>49</sup> *Phys. II*, v, 196 b 21-22: "That which has a purpose is anything that might be done as the outcome of thought or anything due to nature" (Greek text Ch. 2, n. 6). Aristotle undoubtedly views the parts of organisms as substantial (i.e. as having a clearly-defined individual existence within the organism) when he attributes purpose to them (e.g. leaves are for the protection of fruit, *Phys. II*, viii, 199 a 25-26), since that which does not exist in its own right cannot have a purpose. That which is ἔνεκά του (for a purpose) has a goal or meaning for man. Likewise, the chance event, e.g. the discovery of buried treasure, strikes man as being meaningful or interesting, i.e. as being for a purpose, namely the betterment of life.

<sup>50</sup> *Phys. II*, iii, 194 b 30-32, 195 a 21-23.

<sup>51</sup> *Rhet.* I, x, 1369 a 32 - b 5; *APo* II, xi, 94 b 27 - 95 a 9, esp. 95 a 8-9: ἀπὸ τύχης δ' οὐδὲν ἔνεκά του γίνεται (these texts are dealt with more fully *infra* Ch. 3(a)); *Protrep.* B12 DÜRING: τῶν μὲν οὖν ἀπὸ τύχης γιγνομένων οὐδὲν ἔνεκά του γίνεται, οὐδ' ἔστι τι τέλος αὐτοῖς...συμβαίη μὲν γὰρ ἂν καὶ ἀπὸ τύχης τι ἀγαθόν, οὐ μὴν ἀλλὰ γε κατὰ τὴν τύχην καὶ καθόσον ἀπὸ τύχης οὐκ ἀγαθόν. ἀόριστον δ' αἰεὶ τὸ γιγνομένον ἔστι κατ' αὐτήν (for the meaning of ἀόριστον cf. *infra* §x). Cf. also *Rhet.* I, ix, 1367 b 25-6 and GRIMALDI, *Aristotle, Rhetoric I...*212; *Part. An.* I, v, 645 a 23-25.

<sup>52</sup> *Phys. II*, v, 197 a 6, 196 b 29-30; *Met.* K(XI), viii, 1065 a 30-31. Cf. GUTHRIE, *Notes on some passages...*75 and *A History...*VI, 235-6. Thus HINTIKKA, in his highly interesting study *Aristotle on modality...*114, criticises Aristotle unfairly on the basis of an incorrect premise: "...chance is contrary...to purpose." He writes *ibid.* 116: "If Aristotle had been as consistent in his adherence to the goal-directed conceptual models as Plato, he might have followed Plato and assimilated chance...to necessity, as Plato did in the *Timaeus*." In the present study I attempt to show that such criticism of Aristotle lacks justification. On the *Timaeus* cf. *infra* Ch. 4(b)(i), pp. 140-1.



itself is not for a purpose, since it is not a *per se* (substantial), but an accidental or concomitant cause.<sup>53</sup> This Aristotle expresses by stating that chance is not a cause of anything simply (ἀπλῶς), i.e. in its own right.<sup>54</sup> To give an example: the man who recovered his debt by chance did not set out to recover his debt, i.e. it was not a chance event that caused his decision to set out for the market-place. But, on the other hand, the chance event pertained to the *area* of the meaningful, because the man would certainly have set out for the market-place *with the purpose* of recovering his debt, had he known in advance that he would recover his debt by doing so.

It has been claimed that Aristotle is careless in saying that chance is a concurrent cause, rather than restricting himself to holding that a thing due to chance is a concurrent outcome.<sup>55</sup> But chance (τύχη) for Aristotle is a cause and is not the same as a chance outcome or piece of luck (εὐτύχημα). Aristotle shows that coincidences (chance concurrences) are due to nothing in the substance or *per se* cause which chances to concur with the unexpected accident. There is, therefore, some cause of *significant* concurrence other than the *per se* cause that concurs. Aristotle holds that this cause is what people call chance, which in fact is nothing other than the imposition of a meaningful

<sup>53</sup> *Phys.* II, v, 197 a 5-6: ἡ τύχη αἰτία κατὰ συμβεβηκός. A. MANSION, *Introduction...*296, who certainly realises that chance is an accident, not a substance, nonetheless falls into the trap of describing chance as an efficient cause. The same is true of JUDSON, *Chance...*79-80; URBANAS, *La notion d'accident...*155; VERBEKE, *Happiness and Chance...* 248. Already J.S. MILL, *A System of Logic...*Bk. 3, Ch. V, §11 Note, p. 366 and GROTE, *Aristotle...*115, believed that Aristotle had held chance to be an efficient cause. But for Aristotle an accident cannot be an efficient cause, as it has no existence of its own, and hence in itself can cause nothing (197 a 13-14, quoted *infra* n. 54). It does not inhere from the start in the *per se* cause of a chance event (e.g. the decision to plant a tree), but only from the moment the chance event (discovery of buried treasure) occurs. LENNOX, *Teleology...*233 holds that chance is an incidental final cause, which is not possible for the same reason. JOHNSON, *Aristotle on Teleology...*96 n. 5, 102, holds that chance (which he calls 'luck') is both efficient and final cause, without realising that this is true only of the *per se* cause. Cf. Chapter 5(a) *infra*.

<sup>54</sup> *Phys.* II, v, 197 a 13-14: ἔστιν αἴτιον ὡς συμβεβηκός ἡ τύχη ὡς δ'ἀπλῶς οὐδενός. Cf. *Phys.* II, viii, 199 b 23. Chance is not a *per se* or substantial cause, i.e. a cause *qua* substance, as is clear from 196 b 26 and 198 a 9, where Aristotle contrasts chance with a cause καθ' αὐτό. Cf. *Phys.* II, vi, 197 b 19 and *Met.* K(XI), viii, 1065 a 32 - 1065 b 4. For ἀπλῶς meaning καθ' αὐτό cf. *EE* VI (= *NE* VII), ix, 1151 b 2-3.

<sup>55</sup> CHARLTON, *Aristotle's Physics, Books I and II...*108.

interpretation by man on particular kinds of concurrence, which is what makes them unexpected. Without the expectation of intellect there is no cause of (the experience of) coincidences, which occur randomly without being observed.<sup>56</sup> But there is a cause that causes certain concurrences to be said to be “by chance”, and this cause is the human pursuit of goals, which explains why some concurrences are unexpected.

Thus it is possible for Aristotle in his revised definition of chance (197 a 5-6) to replace his original observation that a chance event is necessarily unusual (196 b 10-13) by the conclusion that chance is an accidental cause (αἰτία κατὰ συμβεβηκός). But since accidents in themselves have no purpose, a chance occurrence must be further defined as pertaining to the *area* of purpose, i.e. of being the kind of event that is meaningful or choiceworthy.

*(ix) Chance as an accidental cause can pertain to any category*

It has been seen that Aristotle defines chance as an accidental cause (αἰτία κατὰ συμβεβηκός, 197 a 5-6, 33). It has also been seen that an accidental cause is always accidental to a substantial or *per se* cause (§vii *supra*). However, it is the accident (accidental cause) rather than the *per se* cause, which is said by Aristotle to be the cause of the chance event.<sup>57</sup>

Aristotle illustrates his analysis of chance by means of examples. His favourite example in *Phys. II* is that of a man who collected a debt from his debtor by chancing to meet him in the market-place.<sup>58</sup> The *per se* or fundamental cause – assimilated by Aristotle to a substantial cause – of collecting the debt is then seen as the cause in the mind of the man<sup>59</sup>

<sup>56</sup> *Met. Δ(V)*, xxx, 1025 a 24-25: οὐδὲ δὴ αἴτιον ὤρισμένον οὐδὲν τοῦ συμβεβηκός ἀλλὰ τὸ τυχόν· τοῦτο δ'ἀόριστον; *Met. E(VI)*, iv, 1027 b 34: τὸ γὰρ αἴτιον τοῦ μὲν [sc. of τὸ συμβεβηκός] ἀόριστον.

<sup>57</sup> *Met. E(VI)*, ii, 1027 a 7-8: τῶν γὰρ κατὰ συμβεβηκός ὄντων ἢ γιγνομένων καὶ τὸ αἴτιόν ἐστι κατὰ συμβεβηκός. Cf. also *infra* Ch. 4(a)(xiii).

<sup>58</sup> Cf. *Phys. II*, v, 196 b 33 - 197 a 5; 197 a 15-18; *Phys. II*, iv, 196 a 3-5.

<sup>59</sup> The cause of human actions is in the soul. Cf. *Met. Z(VII)*, vii, 1032 a 32 - 1032 b 30, esp. 1032 b 21-23. Cf. also FREELAND, *Accidental Causes...54*: Aristotle “is perfectly willing to describe even the moving cause...as a substance (i.e. when it is potential, rather than actual).” Cf. *supra* p. 28 and n. 30.

which made him go to the market-place,<sup>60</sup> while the accidental cause of collecting the debt is the mental recognition of the significance of the coincidental meeting with his debtor.<sup>61</sup> In *Phys. II*, viii Aristotle also gives the case of the visitor who came by chance at the right time and paid the ransom before departing.<sup>62</sup> Here again the *per se* or substantial cause is the decision of the visitor to come. He did not come to pay the ransom, but would have come with this purpose, if he had known about the kidnapping. The accidental cause of paying the ransom and freeing the imprisoned is the mental recognition of the significance of the coincidence of this coming at the same time as the kidnapping. Again, in *Met. Δ(V)*, xxx Aristotle gives the example of a man who found a treasure while digging a hole for a plant.<sup>63</sup> The *per se* or substantial cause

<sup>60</sup> Thus those who claim that the cause of collecting the debt was the man's going to the market-place (*Phys. II*, iv, 195 b 36 - 196 a 5) are right as regards the *per se* or substantial cause, but not as regards luck, which is an accident, not a substance.

<sup>61</sup> SORABJI, *Necessity, Cause and Blame...5* holds that the decision of the man to go to the theatre is the accidental cause of recovering the debt. However, this would appear to be a reversal of Aristotle's standpoint and to be out of tune with his metaphysical system. Cf. *infra* Ch. 8(b)(ii), p. 301 n. 126, p. 289. CHARLTON, *Aristotle's Physics, Books I and II...107* argues that it is not the recovery of the debt which Aristotle regards as the outcome of luck, but A's going to where B is. But Aristotle states very clearly that the recovery of the debt (ἡ κομιδὴ) is the end which would have been willed (would have been the cause in the creditor) had he known (197 a 1-2). The creditor is said to have *come* by chance (196 b 33-34, 197 a 3, 196 a 3)(rather than to have recovered his debt by chance) because Aristotle assumes that if you come to where your debtor is, you get back your debt when your debtor has the money to repay you (cf. *Phys. II*, viii, 199 b 18-20). The outcome of luck is obviously not just meeting your debtor, but actually getting back your money, which is the end (τὸ τέλος, ἡ κομιδὴ, 197 a 1). There would be no luck involved in meeting your debtor unexpectedly if you failed to get your money back from him. The same remark applies to Charlton's interpretation (*ibid.*) of *Phys. II*, viii, 199 b 20-25 and *Met. Δ(V)*, xxx, 1025 a 25-30. In explaining why Aristotle states (196 b 36) that the creditor did not go to the market-place regularly – since one would think that the coincidence of meeting his debtor would be enough on its own to be called lucky – one should doubtless conclude with Ross, *Aristotle's Physics...520 ad loc.* that the unusualness of the creditor's visit to the market-place merely heightens the coincidence of meeting with his debtor. The coincidence is further heightened by the fact that the debtor is himself collecting a debt at the very moment when the creditor chances to meet him. SAUVÉ MEYER, *Aristotle, Teleology, and Reduction...819* holds that the meeting is an accident and "hence has no intrinsic cause." But there cannot be an accident without an underlying *per se* cause.

<sup>62</sup> *Phys. II*, viii, 199 b 20-25.

<sup>63</sup> *Met. Δ(V)*, xxx, 1025 a 15-19.

of finding the treasure is then the decision to dig a hole for a plant. The accidental cause of finding the treasure was the mental recognition of the significance of the coincidence of the digging with the place where the treasure was hidden.

From the examples given so far it is to be noted accordingly that a chance event occurs where there is a coincidence of the fundamental, *per se* or substantial cause of the chance event with a category which is unusual (i.e. not essential to its substantial basis). This Aristotle states in his account of the term συμβεβηκός in *Met. Δ(V)*, xxx. There he writes:

Therefore, since there is something which inheres [sc. the accidental] and something in which it inheres [sc. the substance]<sup>64</sup> and some of these [sc. things which inhere] inhere in a particular place and at a particular time, whatever inheres [sc. in a substance], but not because it is this [sc. substance], or at this time or in this place, will be coincidental.<sup>65</sup>

Thus the fact that the builder or sculptor is fair-skinned or a musician is an accident based on the coincidence of a quality with a substance. If this were meaningful, in the sense of contrary to expectation, it would be a chance event. The fact that the creditor happened to meet his debtor in the market-place is an accident based on the mental recognition of the significance of the coincidence of the right place with a *per se* cause or substantial basis (namely, the decision to go<sup>66</sup> – which was taken for a different purpose). Likewise the fact that the man happened to find a treasure is an accident based on the mental recognition of the significance of the coincidence of the right place with a *per se* cause or substantial basis (namely the decision to dig a hole for a plant). Again, the fact that the visitor happened to pay the ransom is an accident based on the mental recognition of the significance of the coincidence of the right time with a *per se* cause or substantial basis (namely the decision of the visitor to come). Finally,

<sup>64</sup> For the assimilation of decisions to the status of substances cf. *supra* nn. 49-50, 59.

<sup>65</sup> *Met. Δ(V)*, xxx, 1025 a 21-24: ὥστ' ἐπεὶ ἔστιν ὑπάρχον τι καὶ τινί, καὶ ἕνα τούτων καὶ ποῦ καὶ ποτέ, ὅ τι ἂν ὑπάρχη μὲν, ἀλλὰ μὴ διότι τοδὶ ἦν ἢ νῦν ἢ ἐνταῦθα, συμβεβηκὸς ἔσται.

<sup>66</sup> Cf. *supra* n. 59.

the fact that someone ended up in Aegina is an accident based on the coincidence of an affection (a storm or being captured by pirates) with the *per se* cause or substantial basis which is his decision to sail elsewhere.<sup>67</sup> Outside the realm of human action, the fact that a horse was saved is an accident based on the coincidence of the right time with its coming.<sup>68</sup> The fact that a stone hit someone is an accident based on the coincidence of the right time or the right place with its falling.<sup>69</sup> The fact that a tripod fell in such a way that someone could sit on it is an accident based on the coincidence of the right posture (or relation) with its falling.<sup>70</sup> Thus from Aristotle's examples it would appear that the accident that goes to make up each chance event may pertain to any of his categories.

In the case of a chance event there are, accordingly, two causes: the *per se* cause and the accidental cause. In the case of the man who recovered his debt, for example, the *per se* cause (his decision to go to the market-place) was an efficient cause, and there is a necessary connection between the effect and the cause, in the sense that he would necessarily not have recovered the debt if he had not taken the decision (cf. *APo* II, xvi). In the case of the accidental cause (the mental recognition of the significance of meeting with the debtor) the effect/*explanandum* (recovering the debt) is necessarily linked to (dependent upon) the accidental cause *qua* cause/*explanans* (not *qua* accidental). The fact that the cause is accidental means that the meeting need not have happened. But given that it did happen, the necessary link occurred between *explanandum* and *explanans*.<sup>71</sup>

<sup>67</sup> *Met.* Δ(V), xxx, 1025 a 25-30. The *per se* cause: A man intended to sail elsewhere, just as another man decided to go to the theatre. An accidental cause intervened: in the first case a storm arose, in the second case the man met his debtor. There occurred a chance outcome: the first man ended up in Aegina and the second man recovered his debt. Metaphysically, the storm is the *accidental* cause of the man ending up in Aegina. Aristotle is imprecise when he writes that the storm was the *cause* of the man not getting to where he was sailing to (1025 a 29-30), since the storm was no more than the *accidental* cause.

<sup>68</sup> *Phys.* II, vi, 197 b 15-16.

<sup>69</sup> *Phys.* II, vi, 197 b 30-32. This is the example of chance given by MONOD, *Le hasard...*128.

<sup>70</sup> *Phys.* II, vi, 197 b 16-18.

<sup>71</sup> On the nature of causes cf. also *infra* Ch. 8(b)(ii), pp. 301-4.