

Aristotle's concept of matter

According to a common view Aristotle introduces matter as the substratum of substantial change. However, it is unclear what it means to be the substratum of substantial change. Hence it is unclear what has to be taken as Aristotelian matter.

1. Substantial and accidental change in *Gen. Corr. I 4*

[1] Each change involves *hypokeimenon* and *pathos*; change can occur in either of them.

[2] "It is alteration when the *hypokeimenon*, which is perceptible, remains, and change occurs in the *pathê*, which are either contraries or intermediates, like the body which is healthy and then ill and remains the same (*hypomenon tauto*), and the bronze which is spherical and then angular and is the same (*autos ên*)." (319b10-14)

[3] "However, when the whole thing (*holon*) changes without anything perceptible remaining as the same *hypokeimenon* (*hôs hypokeimenou tou autou*) [...], this is generation, and the corruption of something else." (319b14-21)

[4] "When, therefore, change is in quantity, it is growth and diminution, when it is in place, it is locomotion, when it is in property and quality, it is alteration; but when nothing remains of which the other is a *pathos* or generally an accident, then this is generation, or respectively corruption." (319b31-320a2)

[5] "Matter is especially and primarily the *hypokeimenon* which is susceptible for generation and corruption, but in a way also the *hypokeimenon* for the other changes, insofar all *hypokeimena* are susceptible for contraries." (320a2-5)

[1] Περὶ δὲ γενέσεως καὶ ἀλλοιώσεως λέγωμεν τί διαφέρουσιν· φαινὲν γὰρ ἐτέρας εἶναι αὐτάς τὰς μεταβολὰς ἀλλήλων. Ἐπειδὴ οὖν ἐστὶ τι τὸ ὑποκείμενον καὶ ἕτερον τὸ πάθος ὃ κατὰ τοῦ ὑποκειμένου λέγεσθαι πέφυκεν, καὶ ἔστι μεταβολὴ ἑκατέρου τούτων.

[2] ἀλλοιώσις μὲν ἐστίν, ὅταν ὑπομένοντος τοῦ ὑποκειμένου, αἰσθητοῦ ὄντος, μεταβάλλῃ ἐν τοῖς αὐτοῦ πάθεισιν, ἢ ἐναντίοις οὖσιν ἢ μεταξύ, οἷον τὸ σῶμα ὑγιαίνει καὶ πάλιν κάμνει ὑπόμνον γε ταῦτό, καὶ ὁ χαλκὸς στρογγύλος, ὅτε δὲ γωνιοειδῆς ὁ αὐτός γε ὦν.

[3] Ὅταν δ' ὅλον μεταβάλλῃ μὴ ὑπομένοντος αἰσθητοῦ τινὸς ὡς ὑποκειμένου τοῦ βάλλῃ μὴ ὑπομένοντος αἰσθητοῦ τινὸς ὡς ὑποκειμένου τοῦ αὐτοῦ, ἀλλ' οἷον ἐκ τῆς γονῆς αἶμα πάσης ἢ ἐξ ὕδατος ἄηρ ἢ ἐξ ἀέρος παντὸς ὕδωρ, γένεσις ἢ δὴ τὸ τοιοῦτον, τοῦ δὲ φθορά [...].

[4] Ὅταν μὲν οὖν κατὰ τὸ ποσὸν ἢ ἢ μεταβολὴ τῆς ἐναντιώσεως, αὔξη καὶ φθίσις, ὅταν δὲ κατὰ τόπον, φορὰ, ὅταν δὲ κατὰ πάθος καὶ τὸ ποιόν, ἀλλοιώσις, ὅταν δὲ μὴδὲν ὑπομένη οὐ θάτερον πάθος ἢ συμβεβηκὸς ὅλως, γένεσις, τὸ δὲ φθορά.

[5] Ἐστὶ δὲ ὕλη μάλιστα μὲν καὶ κυρίως τὸ ὑποκείμενον γενέσεως καὶ φθορᾶς δεκτικόν, τρόπον δὲ τίνα καὶ τὸ τὰς ἄλλαις μεταβολαῖς, ὅτι πάντα δεκτικὰ τὰ ὑποκείμενα ἐναντιώσεών τινων.

2. Two interpretations

2.1 The traditional view: Joachim (1926), Williams (1982), Cohen (2012)

Substantial and accidental change differ with respect to the substratum. In accidental change the substratum is a sensible substance. In substantial change the substratum is matter. The substratum has the same role in both kinds of change: it remains the same.

Joachim on [3]: "ὅλον (...) does not mean that, in γένεσις or φθορά, the *whole* substance changes: for πρώτη ὕλη persists unchanged." (Joachim 1926, 107f.)

Williams on [5]: "[This] clearly indicates that prime matter is the substratum of generation and corruption (...). It is said to be receptive of contraries. How can it receive the new contrary after having lost the old one without remaining there throughout the change?" (Williams 1982, 103)

2.2 The rival view: Charlton (1970), Jones (1974), Gill (1989), Broadie (2004)

Substantial and accidental change have the same type of substratum, i.e. a sensible substance. In accidental change it persists; in substantial change it does not persist.

Gill: "In nonsubstantial changes the ὑποκείμενον remains the same when its accidental properties (quantities, locations, qualities) are replaced, but in substantial generation and destruction the ὑποκείμενον itself is destroyed and a new ὑποκείμενον emerges because factors intrinsic to the ὑποκείμενον are lost." (Gill 1989, 60)

Gill on [5]: "Aristotle's description of matter as 'the ὑποκείμενον receptive of generation and destruction' seems, on its face, to characterize a subject that is perishable." (Gill 1989, 55f.)

Charlton: "[F]or the moment we may notice that Aristotle does not say that anything remains, but only that something underlies, in cases of coming into existence, and that (...) if anything did remain in all cases, there would be no such thing as coming into existence, but only alteration." (Charlton 1970, 77)

2.3 Two notions of matter

Traditional view: matter is an entity that remains the same in the generation of a substance.

- Brings out the parallels between substantial and accidental change.

- Usually views matter as an extra entity or class of entities besides substantial individuals.

Rival view: matter is an entity that precedes the generation of a substance.

- Does justice to Aristotle's definition of matter as *to ex hou*.

- Usually views 'matter' as a functional term which refers to any entity that precedes a new substance.

3. Problems

3.1 with the traditional view

(1) Suggests a 'substantive view of matter' (J. Beere).

- Aristotle defines substance as the only thing that can take on opposite features while remaining numerically the same (Cat. 5, 4a9-21).

- Aristotle rejects the view that there is one matter persisting throughout all changes and claims that this reduces substantial change to accidental change. In Phys. II 1 Antiphon is reported to claim that matter remains the same throughout all changes, and to conclude that matter is substance. Individual living beings and artefacts are in his view accidental modifications of matter, and are independent entities only by convention (*dia nomon*; Phys. II 1, 193a9-17; cf. Met. A 3, 983b11-17; Gen. Corr. I 1, 314a8-11; I 1, 314b1-4).

(2) The traditional view does not help to specify proximate matter. According to Aristotle, the matter of a house are bricks (Met. Z 8, 1033b30; 1033a15). However, in the process of building a house, not only the bricks persist, but also clay, earth, etc.

3.2 with the rival view

(1) Aristotle sometimes says that matter persists (*hypomenein*).

Phys. I 7, 190a24-26: bronze is *hypomenon* when a statue is formed.

Met. A 2, 1069b8f.: "Something persists (*hypomenei*), while the contraries do not persist; therefore there is a third thing in addition to the contraries: matter."

(2) Aristotle sometimes speaks of 'immanent matter'.

Phys. I 9, 192a32f.: "For my definition of matter is just this – the primary *hypomkeimenon* of each thing, from which it comes to be, and which is present (*enhyparchontos*) in the result."

Met. A 2, 1013a24-26: "Cause in one way is that out of which something comes to be as the immanent (*enhyparchontos*); in this way the bronze is the cause of the statue, the silver of the bowl (...)."

(3) The result of generation is a composite substance (e.g. Phys. I 7, 190b10f.; Met. Z 3, 1029a3-5).

(4) If nothing persists, it is unclear how substantial change can be distinguished from cases of mere sequence or substitution. Something has to guarantee continuity.

4. Suggestion

The persistence conditions of individual substances do not apply to Aristotelian matter:

(1) Matter is not an individual entity: Met. Z 3, 1029a27f.; Met. H 1, 1042a27f. Aristotle's examples: sensible stuff like bronze, wood, katamenia.

(2) The immanent matter is dependent on the individual substance now constitutes: if one makes a sphere from bronze, the result of the process is not "spherical bronze", but "bronzen sphere" (Met. Z 7 and Θ 7; Phys. VII 3).

(3) The unity of individual substances comes at the cost of the re-identification of their material parts (Scaltsas, Marmodoro).

Result: Matter remains during substantial change, but does not stay the same entity. The pre-existing matter transforms into the material component of the newly generated substance. E.g. the bronze transforms into the bronzen quality of a statue, the katamenia transform into the animal's body.

Application to the text: In [2], Aristotle says that the substratum of accidental change "remains the same" and "is the same". In [3], Aristotle states that nothing remains "as the same *hypokeimenon*".

Notion of matter: matter is an entity that precedes the generation of a substance, and continues to exist as the material component of that substance.

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