Technē as a Science for Aristotle
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Art. Craft (technē): art of medicine, art of building, art of flute-playing…

Knowledge (epistēmē): a flexible term for Aristotle, sometimes but not always associated with technē.

Question: in what sense does technē qualify as knowledge?

Our main claim: a technē is a science; it can be modelled with demonstrations.

1. Technē as Productive Knowledge

(T1) Since some principles (archai) of this sort are present in the things that lack a soul, and others in things that have a soul, and in a soul and in the part of the soul that has reason (logon), clearly some powers will be non-rational and some will involve reason (meta logou). Hence all technai, i.e. all productive forms of knowledge (kai hai poiētikai epistēmai), are powers: for they are principles of change in another thing or [in the thing itself] qua other.

Ετπὶ δ’αι μὴν ἐν τοῖς ἄφιξις ἐνυπάρξονται ἄρχαι τοιούται, αἱ δ’ἐν τοῖς ἐμφύσοις καὶ ἐν ψυχῆ καὶ τῆς ψυχῆς ἐν τῷ λόγῳ ἔχονται, δήλον ὅτι καὶ τῶν δυνάμεων αἱ μὲν ἔχουσαι ἄρχοι αἱ δὲ μετὰ λόγον. Διὸ πάσαι αἱ τέχναι καὶ αἱ ποιητικαὶ ἐπιστήμαι δυνάμεις εἰσίν· ἄρχαι γὰρ μεταβλητικαὶ εἰσίν ἐν ἄλλῳ ἢ ἂν ἄλλῳ. (Met. Θ.2, 1046a36-b4)

Irrational powers: powers that are not in the rational part of the soul.

Rational powers: powers in the rational part of soul (they involve reason).

1046b3: All arts (technai) are productive forms of knowledge (poiētikai epistēmai). What does this mean?

Met. Θ.2 adds that technical knowledge is an account (logos, 1046b7-8):

(T2) And for each of the ones in accordance with logos, the same [powers] are of their contraries (enantion), but for the non-rational ones, one [power is] of one [outcome] – say the hot only of heating, but medicine both of illness and health. The reason is that knowledge is logos, and the same logos reveals both a thing and its lack.

Καὶ αἱ μὲν μετὰ λόγου πάσαι τῶν ἐναντίων αἱ αὐταί, αἱ δὲ ἄλογοι μία ἐνός, οἷον τὸ θερμὸν τοῦ θερμαίνειν μόνον ἢ τὸ ἱστηρικόν νόσον καὶ ψυχίας. αἰτίαν δὲ ὅτι λόγος ἐστίν ἡ ἐπιστήμη, ὁ δὲ λόγος ὁ αὐτός δηλοὶ τὸ πράγμα καὶ τὴν στέρησιν. (Met. Θ.2, 1046b4-7)

Met. Z.7 specifies that the account is an account of the product:

(T3) [1] In the case of technē what comes to be are the things of which the form (eidos) is in the soul (by ‘form’ I mean the what-it-is of each thing, namely its primary being). For in fact contraries have in a sense the same form; for the being of a privation is the opposite, like health of disease; thus disease is the absence of that; and health is the account (logos) in the soul, namely the knowledge (epistēmē) of health.

[Αἰτὶ τέχνης δὲ γίγνεται ὅσων τὸ εἶδος ἐν τῇ ψυχῇ (εἶδος δὲ λέγω τῷ τί ἐγέν ἐκκάστου καὶ τὴν πρῶτην οὐσίαν), καὶ γὰρ τῶν ἐναντίων τρόπον τινὰ τὸ αὐτὸ εἶδος: τῆς γὰρ στερημέος οὐσία ἡ ἀντικειμένη, οἷον ψυχία νόσους: ἐκκείνης γὰρ ἀποστείει καὶ οὐσία, καὶ δὲ ψυχῆς ὑποτεθή καὶ ἡ ἐπιστήμη. (Met. Z.7, 1032a32-b6)

E.g. medicine is the account of health; the art of building is the account of the house.
T2’s argument for the claim that a technē is productive of contraries:

Since technē is productive knowledge, and this knowledge is an account of X, technē is productive of X. An account of X is also, derivatively, an account of not-X. But then, the given technē is productive of not-X too.

So: technical knowledge is an account of X and (derivatively) its contrary not-X; it is productive of X and not-X.

Still unclear:

i) Why are technai productive, and in what sense?
ii) What kind of account of the product counts as a technē?

Note: the account has to be rich enough to tell artisans and non-artisans apart.

2. Technai as causal accounts at the level of universals

2.1 Technical accounts are at the level of universals

(T5) [No technē looks at the particular. For instance, medicine does not look to what is healthy for Socrates or for Callias, but rather what is healthy for someone of a given sort, or the ones of a given sort: for this is a matter of technē (entechnon), whereas the particular is indefinite and not knowable.]

[Ο]ιδέμια δὲ τέχνη σκοπεῖ τὸ καθέκαστον, οἷον ἢ ἱστορική τί Σωκράτει τὸ ύπερνόν ἢ Κάλλας, ἀλλὰ τί τῷ τοιῶδε ἢ τοῖς τοιοίσδε (τοῦτο γὰρ ἐντεχνός, τὸ δὲ καθέκαστον ἰδεοῦ καὶ οὐκ ἐπιστητόν). (Rhet. 1.2, 1356b30-33)

Technai consist of generalizations at the level of universals.
E.g. medicine is knowledge of what brings about health in a given type of patient—say, someone who has fever—and not knowledge of what is healthy for Callias.

2.2 Technical accounts are explanatory

(T6) [We still think that knowledge (eidenai) and comprehension belong to technē rather than to experience (empeirias), and we take artisans to be wiser than experienced people (which implies that in all cases wisdom depends rather on knowledge [than on experience]). And this is so because the former [i.e. artisans] know the cause, but the latter [i.e. experienced people] do not. For experienced people know that the thing is so, but do not know why, while the others grasp (gnōrizousin) both the why (to dioti) and the cause. Hence, we think that the masters (tous architektonous) of each [technē] are more honourable and know in a truer sense than the manual workers (tōn cheirotechnōn), and are wiser, because they know the causes of the things that are done (tōn poioumenōn), so that artisans are wiser not in virtue of being able to act, but in virtue of having the account (logos) for themselves and grasping the causes.]

[Π]ό γε εἰδέναι καὶ τὸ ἐπαίειν τῇ τέχνῃ τῆς ἐμπειρίας ὑπάρχειν οἰόμεθα μᾶλλον, καὶ σοφωτέρους τοὺς τεχνίτας τῶν ἐμπειρῶν ὑπολογίζομεν, ὡς κατὰ τὸ εἰδέναι μᾶλλον ἀκολουθούσα τὴν σοφίαν πάσιν τούτοις δέντι οἱ μὲν τὴν αἴτιαν ἴσασιν οἱ δ’οὖν. οἱ μὲν γὰρ ἐμπειροῦσι διότι μὲν ἴσασιν, διότι δ’οὖν ἴσασιν οἱ δὲ τὸ διότι καὶ τὴν αἴτιαν γνωρίζουσιν. διὸ καὶ τοὺς ἀρχιτέκτονας περὶ ἐκαστοῦ τιμωτέρους καὶ μᾶλλον εἰδέναι νομίζομεν τῶν χειροτεχνῶν καὶ σοφωτέρους, διί τὰς αἴτιας τῶν ποιουμένων ἴσασιν, ὡς οὐ κατὰ τὸ πρακτικός εἶναι σοφωτέρους ὄντας, ἀλλὰ κατὰ τὸ λόγον ἔχειν αὐτούς καὶ τὰς αἴτιας γνωρίζειν. (Met. A.1, 981a24-b6)

Technical knowledge is knowledge-why: the artisan can correctly answer relevant-why questions, namely individuate the causes of something. But what causes?

Artisans know ‘the causes of the things that are done’ (981b1): this seems to be knowledge-why of the stages that have to occur for the product to come into existence.
3. Analogies between *technai* and other sciences

(T8) [1] It is the business of experience to provide the principles (τας αρχας) of each [discipline]. I mean for example that astronomical experience [provides the principles] of the astronomical science (tēs astrologikēs epistēmēs) (for once the phenomena had been adequately apprehended, the astrological demonstrations were therefore discovered). Similarly, with any other sort of *technē* or science (καὶ περὶ ἀλλὴν ἡμών αναποδεικτὴν τε καὶ ἐπιστήμην). So that, if the things belonging to each are grasped, we will then be prepared to readily bring the demonstrations (τας ἀποδεικτῆς) to light. For if nothing that truly belongs to the things has been omitted in the survey, we will be in a position to find and show the demonstration of every thing of which there is a demonstration, and to make clear of which things there is no natural demonstration.

(T) Ὅσα μὲν ἀρχές τὰς περὶ ἔκαστον ἐμπειρίας ἐστὶ παραδοθέναι, λέγω δ’οίον τὴν ἀστρολογικήν μὲν ἐμπειρίαν τῆς ἀστρολογικῆς ἐπιστήμης (ληφθέντων γὰρ ἱκανῶς τῶν φαινομένων συνὸς εὑρέθησαν αἱ ἀστρολογικαὶ ἀποδείξεις), ὡμοίως δὲ καὶ περὶ ἀλλὴν ὑποτανοῦν ἔχει τέχνην τε καὶ ἐπιστήμην· ὡστε ἔν λήψῃ τὰ ὑπάρχοντα περὶ ἔκαστον, ἡμέτερον ὡς τὰς ἀποδείξεις ἐτοιμῶς ἐμφανίσει. εἰ γὰρ μηδὲν κατὰ τὴν ἑστικὴν παραλειφθεῖν τῶν ἀληθῶς ὑπαρχόντων τοὺς πραγμάτων, ἔχειμὲν περὶ ἄπαντος σοὶ μὲν ἐστὶν ἀποδείξεις, ταύτην μὲν καὶ ἀποδεικνύον, οὐ δὲ μὴ πέφθεκεν ἄποδείξεις, τότε ποιεῖ φανερόν. (Pr. An. 1.30, 46a17-27)

Possible meanings of ‘demonstrations’ (*apodeixis*) in T8: (a) the scientific demonstrations introduced in the *Posterior Analytics*, (b) deductions, (c) some weaker sense of proof.

At the very least, T8 suggests that there are important structural analogies between *technai* and other sciences.

4. *Technai* as demonstrative bodies of knowledge

Usually, ‘science’ is used in connection with Aristotle to describe bodies of knowledge that can be systematized as sets of scientific demonstrations. These bodies of knowledge are such that each truth is inferred from a set of non-demonstrable premises, called ‘principles’ (what we would call axioms today).

*Aren technai sciences in this sense?*

*The main reason to think that technai can’t be sciences*

(T9) Since that of which there is unqualified knowledge (ἐπιστήμη ἡπλός) cannot be otherwise (ἀδιανότω ἂπλός ἐχεῖν), that which is known in accordance with a demonstrative knowledge (κατὰ τὴν ἀποδεικτὴν ἐπιστήμην) will be necessary (ἀναγκαῖον). Therefore, the demonstration is a syllogistic inference (συλλογισμός) from necessary premises (ἐπιστῆμα).

Ἐπεῖ δ’ ἀδιανότων ἄλλως ἐχειν ἢν ἐστὶν ἐπιστήμη ἁπλής, ἀναγκαῖον ἢν εἰ τὸ ἐπιστήμην τοῦ κατὰ τὴν ἀποδεικτὴν ἐπιστήμην ἀποδεικτικὴ δῆσιν ἢν ἔχει μεν τῶν ἐχειν ἀποδεικτῆν. Ἐξ ἂν ἀναγκαῖον ἄρα συλλογισμός ἢστιν ἡ ἀπόδειξις. (Post. An. 1.4, 73 a21-24)

Scientific demonstrations concern what is true of necessity, and only involve premises and conclusions that are true of necessity.

But *technai* involve claims that do not seem to be true of necessity, like:

(1) Honey-water restores health in feverish people (*Met. E.2 1027a23-24).*
Note that this problem is not confined to technai.

Natural sciences, just like technai, appear to involve claims that are not quite true of necessity simpliciter:

(2) Humans have broad molar teeth. (Phys. II.8, 198b26)
(3) All crabs have the right claw bigger than and stronger than the left claw. (HA IV.3 527b6-7)

So it is unclear how the framework of the Posterior Analytics, as described by passages like T9, can include these disciplines.

Yet Post. An. I.30 extends scientific knowledge to what holds for the most part

(T10) There is no knowledge (epistēmē) through demonstration of what holds by chance (apo tuchēs). For what holds by chance is neither necessary nor for the most part, but [it is] what comes to be contrary to these; and demonstration is of one or other of these. For every syllogism is either through necessary or through for the most part (hōs epi to polu) premises. And if the premises are necessary, the conclusion is necessary too; and if for the most part, the conclusion is of this sort too. Hence if what happens by chance is neither for the most part nor necessary, there will not be demonstration of it.

Τοῦ δ’άπο τύχης οὐκ ἔστιν ἐπιστήμη διάποδεῖξεως, οὔτε γὰρ ὡς ἀναγκαῖον συνθῆς ἐπὶ τὸ πολὺ τὸ ἀπὸ τύχης ἔστιν, ἀλλὰ τὸ παρὰ ταύτα γινόμενον· ἡ δ’ἀποδείξεως διὰτέρου ταύτων. πάς γὰρ συλλογισμός ἢ διάγνωσμός ἢ διὰγνώσματον ἢ διὰ τῶν ὡς ἐπὶ τὸ πολὺ προτάσεων· καὶ εἰ μὲν αἱ προτάσεις ἀναγκαῖαι, καὶ τὸ συμπέρασμα ἀναγκαῖον, εἰ δ’ ἐπὶ τὸ πολὺ, καὶ τὸ συμπέρασμα τοιοῦτον. ὅτι οὖσ’ ἐπὶ τὸ ἀπὸ τύχης μὴθ’ ὡς ἐπὶ τὸ πολὺ μηθ’ ἀναγκαῖον, οὐκ ἂν εἶναι αὐτὸν ἀπόδειξις. (Post. An. I.30, 87b19-27; see also Post. An. II.12 96a8-19)

Two kinds of demonstrations:

- **Necessity-demonstrations:** Demonstrations only involving claims that are true of necessity.

- **FMP-demonstrations:** Demonstrations involving claims that are true form the most part.

In T9, epistēmē only covers what is true of necessity. In T10, it also concerns what is true for the most part. The notion of a demonstration is expanded accordingly, and can now include claims that are true FMP.

**Strict sciences:** sciences only including claims that are true of necessity. They can only be modelled in terms of necessity-demonstrations.

**Non-strict sciences:** sciences including claims that are true for the most part. They can be modelled by means of a set of demonstrations that includes FMP-demonstrations.

The notion of non-strict science is in play elsewhere in the corpus too.

For instance, we find it in Met. E.2, where it is again associated with what is the case FMP.
- *Met.* E.2 contrasts what is of necessity with what is the case FMP:

(T11) Since then among entities some are always the way they are and of necessity (not in the sense in which we say that something is forced, but in the sense in which we say that it cannot be otherwise), and some are not of necessity nor always, but for the most part (*hōs epi to polu*), this is the principle and the cause of the accidental being the case. For that which is neither always nor for the most part the case, we call ‘accidental’.


This claim belongs to medicine. This and the context suggest that *technai* count as sciences (*epistēmēs*) here. In the chapter Aristotle also assumes that natural sciences concern what is the case either of necessity of FMP for most part.

A note on the notion of FMP

(T13) When something happens always or for the most part, it is not accidental nor by chance. In the case of things that hold by nature, [they hold] always thus, if nothing prevents.

In FMP-demonstrations, if both premises are to be valid, ‘FMP’ cannot mean ‘most’. In passages like (T13), in context where Aristotle clearly has arts and natural sciences in mind, he somehow associates what holds for the most part with what holds per se (i.e. not accidentally) and when nothing prevents.

So FMP-claims are *per se* claims that are true in the absence of preventing conditions.
5. Examples of natural and technical demonstrations

5.1 River Demonstration

(T14) Why does the Nile flow more abundantly at the end of the month? Because the end of the month is stormier.

Διὰ τὸ ὁ Νεῖλος φύνοντος τοῦ μηνὸς μᾶλλον ῥεῖ; διότι χειμεριώτερος φθίνων ὁ μεῖς. (Post. An. II.15, 98a31-32)

Our assumption (based on Post. An. I.8; cf. Aimar: ms): when Aristotle reconstructs a demonstration with a term denoting a particular, one can get the proper demonstration by replacing the term denoting a particular with the relevant universal it instantiates.

A: Such-and-such rivers flowing more abundantly.
B: Stormier periods.
C: The end of the month.

River Demonstration

Such-and-such rivers flowing more abundantly belong to stormier periods.
Stormier periods belong to the end of the month.
So,
Such-and-such rivers flowing more abundantly belong to the end of the month.

5.2 Broad-leaved Trees Demonstration

(T15) Why do trees shed leaves? If it is because of solidification of their moisture, then if a tree sheds its leaves, solidification must be the case, and if solidification is the case—not for everything but for tree—, [the tree] sheds leaves.

[Δ]ιὰ τὰ δένδρα φυλλορροεῖ; εἰ δὴ διὰ πῆξιν τοῦ ύγροῦ, εἴτε φυλλορροεῖ δένδρον, δεὶ υπάρχειν πῆξιν, εἴτε πῆξις υπάρχει, μὴ ὰτιμῶν ἄλλα δένδρα, φυλλορροεῖν. (Post. An. II.16, 98b36-38)

A: Leaf-shedding.
B: Solidification of moisture.
C: Broad-leaved trees.

Broad-leaved Trees Demonstration

Leaf-shedding belongs to solidification of moisture.
Solidification of moisture belongs to broad-leaved trees.
So,
Leaf-shedding belongs to broad-leaved trees.

5.3 War Demonstration

(T16) Why did the Persian war come upon the Athenians? What is the cause of the Athenians’ being warred upon? That they attacked Sardis with the Eretrians—this initiated the change. War A, being first to attack B, Athenians C. B holds of C (being first to attack holds of the Athenians), and A holds of B (men make war on those who have first wronged them). Therefore, A holds of B (being warred upon holds of those who first began), and this—B—of the Athenians (they first began it). Therefore, here too the cause, what initiated a change, is a middle term.
5.4 House Demonstration

A: Stones.
B: First attacking.
C: Trying to expand.

**War Demonstration**
Being warred upon belongs to attacking first.
Attacking first belongs to trying to expand.
So,
Being warred upon belongs to trying to expand.

5.4 House Demonstration

(T17) And it is in this way with regard to tasks (*epi tôn ergōn*): if a house has come to be, it is necessary that stones have been cut and have come to be. Why is this? Because necessarily a foundation has come to be, if also a house has come to be. If a foundation, then necessarily stones have come to be earlier. Again, if there will be a house, in the same way there will have to be stones earlier. And it is shown through the middle term in this way: for there will be a foundation earlier. εἶχε δὲ ὁ ὅστις ἐπὶ τῶν ἔργων· εἶ γέγονεν σιγικα, ἀνάγκη τετμῆσαι λίθους καὶ γεγονέναι. τοῦτο διὰ τί; ὅτι ἀνάγκη τεθμείλῳ γεγονεῖ, εἴτε καὶ σιγικα γέγονεν· εἰ δὲ θεμέλιον, πρότερον λίθους γεγονεῖν ἀνάγκη. πάλιν εἰ ἔσται σιγικα, ὠσκέτως πρότερον ἔσονται λίθοι. δεῖκται δὲ διὰ τοῦ μέσου ὁμοίως· ἔσται γὰρ θεμέλιος πρότερον. (Post. An. II.12, 95b31-37)

A: Stones.
B: Foundation.
C: House.

**House Demonstration**
Stones belong to foundation.
Foundation belongs to house.
So,
Stones belong to house.

So: *technai* are non-strict sciences.

6. Some implications

6.1 Accounting for one sense in which *technē* is productive

(T21) The healthy [patient] comes to be when one thinks (*noēsants* in this way. Since health is this (*tōd*), necessarily if [the patient] is to be healthy, this must be present—say, a uniform state—and if that, heat. And one keeps thinking in this way, until one gets to a final thing which one can make. Then from this point onward the process is called ‘making’—the one towards being healthy. Γίγνεται δὲ τὸ ὑγείας νοησαντος οὕτως· ἐπειδή τοῦ ὑγείας. ἀνάγκη εἰ γέγονεν ἦται τοῦτο ὑπάρχει, οἷον ὁμαλότητα, εἰ δὲ τοῦτο, θερμότητα· καὶ οὕτως ἦν νοεῖ, ἢς ἄν ἀνάγκη εἰς τοῦτο ὃ ὁ αὐτὸς δύναται ἐσχατὸν ποιεῖν, εἶτα ἡ ἠ ἀπὸ τοῦτου κίνησις ποίησις καλεῖται, ἢ ἔπι τὸ ὑγαίνειν. (Met. Z.7, 1032b6-10)
We assume that the level of deliberation, which is explicitly in play in this passage, is importantly distinct from the level of demonstration—the latter merely concerns universals.

Nonetheless one can extrapolate a demonstration on which, somehow, the reasoning of the doctor is based:

A: Healthy.
B: Uniform state.
C: Heat.

**Health Demonstration**
Healthy belongs to uniform state.
Uniform state belongs to heat.
So,
Healthy belongs to heat.

The doctor can keep thinking:

(T22) That which makes (*to poioin*) and that whence begins (*archetai*) the process of becoming healthy, if it happens by *technē*, is the form that is in the soul: but if it happens spontaneously, then it is from whatever starts the making of the maker from *technē*, just as in healing presumably the starting point [of the process of becoming healthy] is from heating (and this one makes by rubbing).

Τὸ δὴ ποιοῦν καὶ θέν αρχεῖ τῇ κίνησι τοῦ ὑγιάνειν, ἃν μὲν ἀπὸ τέχνης, τὸ εἶδος ἐστὶ τὸ ἐν τῇ ψυχῇ, ἕαν δ’ ἀπὸ ταὐτομάτου, ἀπὸ τούτου δ’ ποτε τοῦ ποιεῖν ἀρχεῖ τῷ ποιοῦντι ἀπὸ τέχνης, ὥσπερ καὶ ἐν τῷ ἱστρεύειν ἰσως ἀπὸ τοῦ θερμαίνειν ἡ ἀρχή (τοῦτο δὲ ποιεῖ τῇ τρίψει). (Met. Z.7, 1032b21-26)

A: Healthy.
B: Heat.
C: Rubbing.

**Rubbing Demonstration**
Healthy belongs to heat.
Heat belongs to rubbing.
So,
Healthy belongs to rubbing.

Putting the two demonstrations together, we get a short chain of demonstrations:

**Healthy belongs to uniform state.** Uniform state belongs to heat.

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<tr>
<th>Healthy belongs to heat.</th>
<th>Heat belongs to rubbing.</th>
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- Productivity as *production-guidance*: demonstrations give us steps that have to take place for the goal to come about.
6.2 Accounting for the sense in which technai are for contraries

From demonstrative knowledge of health to demonstrative knowledge of sickness, its contrary:

Since sick is the contrary of healthy, and heating (a patient) makes the patient healthy, then the contrary of heating (the patient) brings sickness upon the patient:

A: Sick.
B: Cold.
C: Putting under ice.

**Sickness Demonstration**  
Sick belongs to cold.  
Cold belongs to putting under ice.  
So,  
Sick belongs to putting under ice.

6.3 Compatibility with EN VI

When Aristotle denies that technai are sciences in EN VI (1140b31-1141a1), he has in mind only strict sciences:

(T23) For we all suppose that what we know is not capable of being otherwise; of things capable of being otherwise we do not know, when they have passed outside our observation, whether they are or not the case. Therefore, the object of knowledge is of necessity. Hence, it is eternal; for things that are of necessity in the unqualified sense are all eternal, and things that are eternal are ungenerated and imperishable.

Πάντες γὰρ ὑπολαμβάνομεν, ὃ ἑπιστάμεθα, μηδὲ ἑνδέχεσθαι ἄλλως ἔχειν· τὰ δὲ ἱνδεχόμενα ἄλλως, ὅταν ἔχω τὸ θεωρεῖν γένεται, λαμβάνει εἰ ἔστιν ἢ μὴ, ἐὰν ἀνάγκης ἡ ἁρα ἐστὶ τὸ ἑπιστητόν. ἁίδιον ἡ ἁρα· τὰ γὰρ ἐξ ἀνάγκης ὅτα ἀπλῶς γάρ εἰναι, τὰ δὲ ἐπάθη ἐγένηκα καὶ ἁφαρτα. (EN VI.3, 1139b19-1140b24)

So we can both claim that technai are epistemai in a strong, scientific, sense and that this picture is compatible with EN VI.3-6, where knowledge merely concerns what is the case of necessity.

**Conclusion**

- Technai are non-strict sciences.
- This claim allows one to explain their analogy with other sciences, their concerning contraries, and one sense in which this knowledge is productive.
- On this picture, Aristotle’s account of technē stays consistent and unified throughout the corpus.

**Selected References**


