

# Debating Dispositions

Issues in Metaphysics, Epistemology  
and Philosophy of Mind

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The Editors

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will start my discussion of Aristotle's account of dispositional causal properties with presenting what Aristotle says about *dynamis* and will later contrast it with his statements about *physis* and *hexis*.<sup>2</sup>

## Aristotle's Theory of Dispositions From the Principle of Movement to the Unmoved Mover

LUDGER JANSEN

It could well be argued that no one influenced and shaped our thinking about dispositions and other causal properties more than Aristotle. What he wrote about power and capacity (*dynamis*), nature (*physis*), and habit (*hexis*) has been read, systematized, and criticized again and again during the history of philosophy. In what follows, I will sketch his thoughts about dispositions and argue that it can still be regarded as a good theory.<sup>1</sup>

### 1. It's all Greek to Me

If asked to explicate the thoughts of an ancient thinker about some modern concept, the first problem to be solved is: Which word do I have to browse for in the index? The origin of the problems discussed in contemporary theories of dispositions – be it of dispositional predicates or of dispositional properties – dates back to the heyday of logical empiricism. The problem of dispositions arose from the quest for an intimate connection between experimental observations and the explanatory language used in scientific theories. This quest is very much a project of the twentieth century and it is, thus, no trivial matter that ancient thinkers had any thoughts about this particular topic at all. Nevertheless, the word “disposition” itself has a Latin origin and the Latin word *dispositio* has, in turn, a Greek equivalent, *diathesis*. But taken in this way, “disposition” means something like “orderly arrangement”, be it of things, of speeches, or of soldiers in an attacking army. Aristotle, of course, has a theory about the correct arrangements of the parts of a speech or of a drama, and he outlines it in his writings on rhetoric and poetics. But when we are asked for Aristotle's theory of dispositions, “disposition” means some causal property. There is, of course, ample material on causal properties in the writings of Aristotle. Yet in these contexts, Aristotle uses words like *dynamis* (“power” or “capacity”), *physis* (“nature”), or *hexis* (“habit”). Accordingly, I

### 2. From Homer to Aristotle

When expounding his theory of dispositions, the key word for Aristotle is *dynamis*. In Aristotle's time, this word was in common usage, and it can already be found in Homer. Here are four quotes featuring this word:<sup>3</sup>

[Odysseus] but bring ye healing, my friends, for with you is the *dynamis*. (*Odyssey* X 69; transl. Murray)

[Telemachos to Nestor] O that the gods would clothe me with such *dynamis*, that I might take vengeance on the wooers for their grievous sin (*Odyssey* III 205–206; transl. Murray)

[Alexandros to Hector] we will follow with thee eagerly, nor, methinks, shall we be anywise wanting in valour, so far as we have *dynamis*; but beyond his *dynamis* may no man fight, how eager soever he be (*Iliad* XIII 785–787; transl. Murray)

[Achilles to Apollo] Verily I would avenge me on thee, had I but the *dynamis*. (*Iliad* XXII 20; transl. Murray)

In Homer, the *dynamis* is something with or within a man that allows him to fulfill a certain task or to defeat his enemy, and sometimes the *dynamis* is thought of as being given by a god. Afterwards, the word acquired a wide range of possible meanings. It can even refer to the riches of a wealthy man (cf. Plato, *Republic* 423a: *chremata te kai dynamis*) or the army of a kingdom (cf. Plato, *Menexenos* 240d: *he Persion dynamis*, the army of the Persians), and even the phonetic quality of a letter (cf. Plato, *Cratylus* 412c: *ten tou kappha dynamin*) or the meaning of letters and syllables (cf. Plato, *Hippias maior* 285d).<sup>4</sup>

From the sixth century BC onwards, the word *dynamis* is also used in philosophical and medical contexts.<sup>5</sup> For example, Alcmaeon of Croton (ca. 570–500) uses the term to define health (*hygieia*) as the balance of powerful things

<sup>2</sup> That Aristotle's theory of *dynamis* is a theory of dispositional properties has also been seen (among others) by Iiske 1996. Already Wolf 1979 discusses both Aristotle's theory and modern theories of dispositions, even though she discusses it under the name of “possibility” (“*Möglichkeit*”).

<sup>3</sup> The translation is Murray's; I modified it by replacing Murray's terms “power” and “strength” by the original *dynamis*. There are six more occurrences of the word in Homer: *Iliad* VIII 294, XIII 786 and *Odyssey* II 62, XX 237, XXI 202 and XXIII 126. Though the noun is quite rare, there are in all about 140 occurrences of words (including verbs and adjectives) containing the root *dyna-*. It would be worth to check our findings against this much broader basis.

<sup>4</sup> All occurrences of *dynamis* in Plato (and many in earlier authors) are collected and discussed in Souilhé 1919.

<sup>5</sup> For a survey of *dynamis* in the Hippocratic texts cf. Plamböck 1964.

<sup>1</sup> This article is a précis of my book on Aristotle's theory of dispositions (Jansen 2002). I leave it to the reader to judge about how I deviate from other recent interpretations like Witt 2003 and Malin 2006.

(*isonomia ton dynamis*), that is, the equal presence “of moist and of dry, of cold and of hot of bitter and of sweet” (DK 24 B 4). It is, however, not clear whether Alcmaeon uses *dynamis* to denote an abstract power or the powerful thing itself, i.e., whether dryness or the dry is the *dynamis*. In a quotation from Democritus (ca. 460-370), it is clear that the *dynamis* to be healthy is not some concrete thing but some property that resides in the human body (DK 68 B 234). It is exactly for this reason that people should care for their health by adjusting their diet rather than praying to the gods. This ambiguity is, perhaps, also reflected in Anaximenes’ (ca. 580-520) remark that neither the hot nor the cold are substances, but properties of an underlying matter (DK 13 B 1 = KRS 143: *pathē koina tēs bylē epigignomena tair metabolais*). For Anaximenes, powers “interpenetrate the elements or bodies” that are their bearers (DK 13 A 10 = KRS 145: *tai entelekeias tair strobais & tair sonai dynamis*).<sup>6</sup>

### 3. Active Powers Defined

In his theorizing about dispositions, Aristotle could, thus, draw on ample material from various philosophical and non-philosophical sources. There was an established linguistic usage of the word *dynamis*, at least since Homeric times. In addition, the word had already entered medical thinking and natural philosophy – and one can find beginnings of a more systematic treatment of the concept of *dynamis* in various authors. Yet, the first comprehensive treatise on *dynamis*, which we know of, is the one by Aristotle, i.e., the ninth book of his *Metaphysics*.<sup>7</sup>

Considering the by then quite respectable history of the word, it should not come as a surprise that Aristotle, in his well-known manner, treats *dynamis* as a word with many different meanings, as a *polachōs legomenon*, as something that is spoken of in many different ways. Although the word *dynamis* has many different meanings, Aristotle thinks that nearly all of them are related to one another, that they make up a sophisticatedly knit web of meanings. At the center of this web is a meaning quite close to the Homeric use of the term: it is *dynamis* as an active power. For *dynamis* used in this way, Aristotle gives the following definition:

<sup>6</sup> There is also a special use of *dynamis* and *dynamon* in geometry, which Aristotle explicitly mentions as a metaphorical use of the term (*Metaphysics* V 12, 1019b 33-34; IX 1 1046a 6-9). On this cf. Jansen 2002, 58-63 with further references.

<sup>7</sup> Smeets 1952 carries up *Metaphysics* IX 1-9 in many different passages by different hands, distinguishing bits written by Aristotle at different times in his life, his students or even later Aristotelians. Without doubt the text has its history and developed over some time. However, I show in Jansen 2002 that such a dissection of the text is not necessary and that, on the contrary, the whole text can be read as a contribution to one single theory.

*Dynamis* means a source (*archē*) of movement (*kinesis*) or change (*metabolē*), which is in something else or in itself as something else. (*Metaphysics* V 12, 1019a 15-16)

The words featuring in this definition are all widely used Greek words, but in Aristotle's terminology they function as technical terms that are in need of an explanation. I will, in turn, explain what Aristotle means by the terms “principle”, “change”, and “movement”, and what he wants to express by the strange phrase “in something else or in itself as something else”.

To begin with, a principle (an *archē*) is defined by Aristotle as “a first thing [...] from which movement and change take their inception” (*Metaphysics* V 1, 1013a18). In this vein, he calls the father and the mother the principles of the child (1013a9), because the coming-to-be of a child starts with an interaction between father and mother. “Change and movement” (*kinesis* and *metabolē*) are probably mentioned as a pair in the definition in order to indicate that an active power can be related to any of the different kinds of changes that Aristotle distinguishes at other places (notably in *Categories* 14, *Physics* V 2 and VII 2). According to Aristotle, one can distinguish between two fundamental types of changes. The first kind is substantial change; a coming-to-be or a passing-away of a substance, which is an entity that exists on its own, like a man, a dog, or a tree. Thus, birth is the beginning of a man's existence and death the end of his existence; both are substantial changes. The other kind is the change of some accident, which can be further differentiated according to the category the changing accident belongs to. Aristotle acknowledges that there are three accidental categories with irreducible changes: quality, quantity and place. A change in quantity can either be growth or diminution.

### 4. The Location of Active Powers

The strange phrase “in something else or in itself as something else” still needs to be explained. I will follow Aristotle's own strategy and explain its meaning through the discussion of two examples, that is, architecture and medicine; or the art of building and the art of healing.

Now, *where* is the art of building located? It is not in the house to be built, because this does not yet exist and non-existing things cannot be bearers of any properties. Nor is it in the building material: logs and stones know no art. It is, of course, in the builder (*Metaphysics* V 12, 1019a 16-17): He has the active disposition to bring about a change “in something else,” i.e., in the building material, from being mere logs and stones to being a new house. Thus the point of the first part of our strange phrase (“in something else”) is that an active power causes changes in something that is distinct from the thing that is the bearer of that power.

The other part of Aristotle's strange phrase can be illuminated with the

help of his second example, the art of healing. Where can we find the art of healing? It is, obviously, in the practitioner, for example in Hippocrates. But what happens if Hippocrates becomes ill himself? In many cases, Hippocrates will be able to heal himself. It is the same ability that allows a person to heal other people when they have the flu and to heal himself when he has it – there is no necessity for Hippocrates to learn something new. But when he does indeed heal himself, Hippocrates is at the same time the bearer of the art of healing and the object undergoing the change of becoming healthy. This fact notwithstanding, Aristotle wants to classify the art of healing as an active power. Yet even though it is true that Hippocrates does not heal someone else, Aristotle would say that he heals himself “as another.” Aristotle explains this formulation in the context of his treatment of the difference between accidental and non-accidental happenings:

[...] it may happen that someone becomes his own cause (*aitia*) of health, if he is a healer; but he has the art of healing not insofar as he is being healed, but it just happens (*synbebēken*), that the same person is a healer and is being healed. Therefore, [being a healer and being healed] are at times separated from each other. (*Physics* II 1, 192b 23–27)

Hippocrates’ ability to heal is independent from his being able to become healthy: His ability to heal is due to his study of medicine, his ability to become healthy is due to his being a human with a certain bodily constitution. There is no intimate connection between these two properties of Hippocrates – he can have the one without the other. It is only by accident that Hippocrates can heal himself. For this reason, Aristotle says that a practitioner may be able to heal himself, but if he does so, he heals himself *as another*, i.e., not as a practitioner, but as a human being with a certain bodily constitution. The art of healing is within the healed, but not as healed (*Metaphysics* V 12, 1019a 18).

## 5. Extending the Conceptual Network

According to Aristotle, the word *dynamis* has many meanings. Most of them, or so Aristotle says, are systematically connected with one another, and the concept of an active power is at the core of this conceptual network. Intimately connected with it is the concept of a passive disposition. To have a passive disposition allows its bearer to undergo a change. A passive disposition is a principle of change in the bearer of the disposition, caused by something else or by itself as something else. Thus, in order to be realized or manifested a passive disposition requires a corresponding active power, and *vice versa*.

Aristotle also talks about qualified dispositions, which are principles to do

something well or to act after a decision to do so, as opposed to do something somehow or by accident. Aristotle illustrates this concept by contrasting a drunkard’s ability to walk with the ability to walk of a sober person. It should be clear that both can walk somehow. Yet only the sober person can walk well, i.e., without staggering and without pausing. Finally, Aristotle mentions resistance dispositions, which allow their bearers to resist changes and stay unchanged. If, for example, a rod is flexible, it can resist breaking when being bent. Thus, a resistance disposition is a principle for not being changed by something else.

All of these different *dynamis* are ultimately related to an active power: Having a passive disposition means to have the disposition to be changed by something with a matching active power. Having a resistance disposition means to have the disposition not to be changed by something with a matching active power, and having a qualified disposition means to have any disposition in a qualified way, where this disposition is itself an active power or, again, related to an active power. Accordingly, Aristotle says that the concept of an active power is the core concept of *dynamis*, its *keiros horos* (*Metaphysics* V 12, 1020a4).

So far, the different varieties of *dynamis* are tied together by a so called *proben* structure: they all share an (implicit) reference to one and the same core concept of active power. However, in extending the conceptual network of *dynamis*, Aristotle also uses his second tool for enlarging conceptual networks, that is, analogy.<sup>8</sup> In this manner, he introduces a second family of *dynamis* or dispositions:

Our meaning [...] is as that which is building is to that which is capable of building, and the waking to the sleeping, and that which is seeing to that which has its eyes shut but has sight, and that which has been shaped out of the matter to the matter, and that which has been wrought up to the un-wrought. [...] some [of these] are as movement to *dynamis*, and the others as substance to some sort of matter. (*Metaphysics* IX 6, 1048a35–b9; transl. Ross)

This second family is introduced by a set of examples, and the reader is invited to recognize the similarity between these examples by considering analogous cases (*hō analogon synhoron*, 1048a 37). Those cases that are “as substances to some sort of matter” are said to stand in an analogy to those cases that are “as movement to *dynamis*.” Aristotle’s claim is that, in a way, a substance relates to its matter like a change relates to the respective *dynamis*. The new members of the conceptual network are no longer principles for change, like those varieties of *dynamis* we discussed before. Rather, they are principles for being something.<sup>8</sup> Instead of principles for healing or for becoming healthy, we now deal with principles for being healthy, or for being red or

<sup>8</sup> For the distinction between principles of change and principles of being cf. Petri 1990.

round or a sword. Principles for change are relevant for dynamic causal explanations. If we want to explain how it comes about that this iron is a sword, we refer to the *dynamis* of a blacksmith to mold the iron into sword shape and to the marching *dynamis* of the iron to be molded in this manner. If, however, we want to explain how the sword's iron is now, at this very moment of time, related to the sword, we are in search for a static ontological explanation. And Aristotle's answer is, obviously, that the iron is realizing its *dynamis* to be shaped like a sword. Here we see how Aristotle's theory of dispositions is relevant to the very heart of his ontology, the hylomorphic composition of substances of form and matter.

## 6. The Syntactical Structure of a *Dynamis* Ascription

It is revealing to have a closer look at the Greek phrases that Aristotle uses to ascribe dispositions or *dynamis*.<sup>9</sup> Most directly Aristotle ascribes a disposition by saying that something has a *dynamis* for something (*echei ten dynamin tou ... = "has the disposition to ..."*), but he also uses the verb *dynamthai* ("to be capable") for this purpose; either a finite form of this verb like *dynamtai* ("it is capable") or the participle *dynamenon* ("being capable"). He also employs the adjective *dynamon* ("capable"), of which Aristotle explicitly says that something is *dynamon* to do something, if it has the *dynamis* to do this (*Metaphysics* IX 1, 1046a20–21). To express that someone has the disposition to walk (*badizein*), the following Greek phrases can thus be used: *echei ten dynamin tou badizein* – *dynamtai badizein* – *dynamenos badizein estin* – *dynamon esti badizein*. In the context of Aristotle's metaphysics, there is another phrase that is important here: *dynamai badizontos estin*. This phrase uses the dative case *dynamai* to express a certain respect (i.e. in its function as *datus respectus*), saying that with respect to his *dynamis*, someone is a walker, traditionally translated as "someone is a potential walker."

The adjective *dynamon* can, however, also indicate that something is possible and in these cases *dynamon estin* means the same as "It is possible that" – and thus it is sometimes used synonymously with *endebestai* which means "It may happen that." Aristotle himself discusses this use of *dynamon* and he explicitly says that this use of *dynamon* is *ou kata dynamin* (1019b 34), that it is not based on dispositions. It belongs to the talk about possibility, not to the talk about dispositions.<sup>10</sup> To be sure, there are intimate connections between disposition talk and possibility talk. But there are important differences be-

tween them and thus they have to be kept apart.<sup>11</sup> To begin with, there is an intriguing syntactical difference that reveals, or so I will argue, a crucial ontological difference. Syntactically, "It is possible that ..." is a sentence operator: It combines with a sentence and forms a sentence again. The phrases that are used to ascribe dispositions, on the other hand, are predicate modifiers,<sup>12</sup> both in ancient Greek and in modern languages. Phrases like "... has the disposition to ..." or "... is able to ..." combine with predicates and form new predicates. They combine with, say, actualization predicates in order to yield disposition predicates.

## 7. The Ontological Structure of Having a *Dynamis*

In the following, I will defend the claim that the above syntactical difference mirrors a crucial ontological difference. This will be obvious if we have a look at the usual possible worlds semantics for modal operators like "It is possible that ...".<sup>13</sup> According to this approach, a sentence of the form "It is possible that *p* is true in the actual world if and only if there is a possible world *w* such that *p* is accessible from the actual world and the sentence *p* is true in this possible world *w*. The truthmaker of such a sentence is not to be found in the actual world, but is located in some possible world.

A *dynamis*, on the other hand, i.e. an ability or disposition, is something that can be encountered in the actual world. It is in the actual world that has or does not have the ability to speak Chinese. Such an ability is a quality token of which I am the bearer. Thus a disposition ascription of the form

[ 'x has the disposition to do (or to be) *F* ]

is true if and only if there is a quality token *d* such that (1) *x* is the bearer of *d* and (2) *d* allows *x* to do (or to be) *F*.

An Aristotelian *dynamis* is part of the furniture of the actual world, and *dynamis* ascriptions are about the actual world. They ascribe actual properties to actual things. By no means do they constitute a "ghost world" of mere possibilities.<sup>14</sup> We can sum up Aristotle's stand in this regard, by formulating two principles, the *Bearer Principle* and the *Principle of Actuality*. The *Bearer Principle* says that dispositions, like all other properties, have always a bearer. No dis-

<sup>9</sup> For textual references cf. Jansen 2002, 20–26.

<sup>10</sup> Cf. Jansen 2002, 21–24 on the use of *dynamon* in the context of modal logic and van Rijen 1989 on Aristotle's overall theory of possibility.

<sup>11</sup> I argued for this in Jansen 2000. Buchheim/Kreepkens/Lorenz 2000 is a collection of essays that discuss the contrast between disposition talk and possibility talk from Aristotle to Heidegger. Cf. also Jacobi 1997.

<sup>12</sup> Cf. Clark 1970. For more references cf. Jansen 2002, 28–34.

<sup>13</sup> Cf. Weidemann 1984, Hughes/Cresswell 1996.

<sup>14</sup> Against Hartmann 1938, 5 ("Gespensterwesen").

position can exist without a bearer: a disposition exists if and only if there is a bearer having that disposition. The *Principle of Actuality* says that nothing has only potential properties or dispositions. If  $x$  has at time  $t$  the disposition to be or to do  $F$ , then there is at least one  $G$ , such that  $x$  is actually realizing  $G$  at  $t$ .<sup>15</sup> The *Principle of Actuality* has a somewhat trivial instantiation, because for Aristotle the dichotomy between actuality and potentiality (or between categorical and dispositional properties) does not make up distinct classes of things but is meant to clear up ambiguities in language. One and the same property like mathematical knowledge is both a disposition and a realization. It is the disposition to solve mathematical problems, but at the same time it is the realization of the disposition to learn about mathematics (cf. *De anima* II 5, 417a 22-b 2 with *Physics* VIII 4, 255a 33-b 5). Consequently, a disposition is itself the realization of another disposition, and a potentiality is something that is actual. In this manner, the *Principle of Actuality* is trivially satisfied, if we choose “the disposition to be or to do  $F$ ” as an instantiation for  $G$ .

### 8. Hartmann and Hintikka: Two Influential Interpretations

We are now prepared to review the two interpretations of Aristotle’s teachings about *dynamis* that were probably most influential in the twentieth century: those by Nicolai Hartmann and Jaakko Hintikka.

In his ontology of modality, Hartmann distinguishes between two kinds of possibility: total possibility and mere partial possibility.<sup>16</sup> In Hartmann’s eyes, it is total possibility that is the only serious candidate for a rigorous treatment in an ontology of modality: A state of affairs  $s$  is called totally possible, if and only if all necessary conditions for  $s$  are given. As a consequence of his conception of determinism, necessary conditions are jointly sufficient. For this reason, various modalities collapse in Hartmann’s theory: Contrary to intuition, one can no longer extensionally differentiate between possibility and necessity: All and only totally possible states of affairs are necessary. Hartmann accepts this consequence, which is a rather unfortunate result in my eyes. But more important for his interpretation of Aristotle is Hartmann’s concept of partial possibility: A state of affairs  $s$  is partially possible if and

only if at least one necessary condition for  $s$  is given. Hartmann now accuses Aristotle that he has only dealt with the inferior concept of partial possibility and rejected the Megarian concept of *dynamis* (to be discussed in the next section), which Hartmann sees as a precursor of his own views.<sup>17</sup> But of course there are many different kinds of necessary conditions for  $s$ , even if we take only those necessary conditions into account for which it is a contingent matter whether or not they obtain.<sup>18</sup> Thus it is clear that Hartmann’s interpretation is far too unspecific as an interpretation of *dynamis* – while having a *dynamis* for  $F$  certainly is a necessary condition to do  $F$ , we do not do justice to Aristotle’s account of *dynamis* if we treat it as being on a par with the obtaining of just any necessary condition.

While Hartmann interprets Aristotle in terms of his concept of partial possibility, Jaakko Hintikka’s interpretation draws on the so called *Principle of Plenitude*. In Hintikka’s wording, the *Principle of Plenitude* says that “[n]o unqualified possibility remains unrealised through an infinity of time.”<sup>19</sup> The *Principle of Plenitude* is closely related to a temporal interpretation of the alethic modalities, i.e., of possibility and necessity. According to such a temporal interpretation, a proposition  $p$  is necessary, if and only if it is always the case that  $p$ , and it is possible, if and only if it is at least at one time the case that  $p$ . Now it is normally not disputed that it is always the case that  $p$  if  $p$  is necessary and that whatever is the case at some point in time must be possible.<sup>20</sup> It is, however, not that clear that all possibilities will or even could be realized at some point of time. It is both possible that I sit at noon and that I stand at that time, but of course I can realize only one of these possibilities at noon. Even if we skip the reference to a certain time, there remain problems: It is possible that, in the future, my son will marry and start a family; but it is as well possible that he remains a bachelor for all his life. But, of course, not both possibilities can be realized. To discard such obvious counter-examples to the *Principle of Plenitude*, Hintikka talks about “unqualified possibilities.” Unqualified possibilities are possibilities that can, in principle, be realized at

17 Cf. Hartmann 1937. Hartmann’s interpretation of Aristotle is influenced by the – different – position of Zeller 1882.

18 As any necessary proposition is implied by any statement, a necessary statement like “ $1 + 1 = 2$ ” may be seen as expressing a condition that is necessary for any other statement. If seen thus, there are no states of affairs that are not partially possible, even impossible states of affairs are partially possible when we take “necessary condition.” In the logical sense and allow necessary propositions to be included within the set of conditions.

19 Hintikka 1973, 96.

20 These two rules correspond to the rules of medieval logic that (a) it is valid to conclude actuality from necessity (*ab necessitate ad esse reale consequentia*) and (b) to conclude possibility from actuality (*ab esse ad posse reale consequentia*). The scope of the following rule, however, is left too vague and can give rise for criticism. For there are necessary propositions like “ $1 + 1 = 2$ ” or “At twelve o’clock it is twelve o’clock” that may be said to be true, but are maybe not true at any point of time but rather in some timeless manner.

15 Cf. Kosman 1969, 43: “[...] for anything which is potentially A, there is some B which at the same time that thing is actually.” Merin 1994, 94 neglects the principle of actuality, although he seems to be conscious about it (cf. 95 n. 32), and thus ascribes Aristotle a theory of *possibile*, i.e. a theory about non-being but possible things. Cf. also Stallmach 1959, 79, arguing against Hartmann 1938: “Auch bei Aristoteles kommt keine Möglichkeit vor ohne eine Wirklichkeit, die sie trägt, nur ist diese nicht – wie die Megariker wollen – schon die Wirklichkeit dessen, dessen Möglichkeit sie erst ist.”

16 Cf. Hartmann 1938. On Hartmann’s modal ontology cf. Hüntelmann 2000, on his interpretation of Aristotle cf. Seel 1982 and Liske 1995.

any point of a potentially eternal history, like the possibility that something red is round or the possibility that there exists an animal that is able to fly.

It has been a matter of debate whether Aristotle does or does not accept the *Principle of Plenitude*. While Lovejoy, in his great study on the *Principle of Plenitude*,<sup>21</sup> claims that Plato accepted the principle but Aristotle did not, Hintikka takes the opposite stand and attributes the principle to Aristotle, but not to Plato. I will not argue for any of these alternatives here, but rather draw attention to two important observations:

(a) If Aristotle subscribed to the principle, it was nothing he took for granted. For in his *De Caelo* I 12 he presents a rather lengthy (and maybe fallacious) proof of this principle for the very special case of eternal entities. There he argues for the following claim: If it is possible for something to exist eternally, it will exist eternally, which in turn implies that all eternal beings are necessary beings. If the *Principle of Plenitude* would be a tacit background assumption of the semantics of *dynamon* or *dynamis*, he would not have needed to construct such an elaborated argument for this claim. Thus, for Aristotle, the *Principle of Plenitude* cannot be a trivial element of the semantics of *dynamon*.

(b) Even if it were such an element, the “unqualified possibilities” that feature in the *Principle of Plenitude* are not the topic of *Metaphysics* IX, but rather the dispositions of finite things and people. In *Metaphysics* IX, Aristotle talks about architects and people skilled in other arts and sciences, about blind and seeing animals, about sitting and standing men, about fluteplayers, sperms and wooden boxes. These are all finite things having finite dispositions, i.e., dispositions that do not have all of eternity at their disposal for realizing themselves. Accordingly, a principle about “unqualified possibilities” would be of no help in explaining the teaching of *Metaphysics* IX. It is neither a plausible nor a helpful starting point when we try to make sense of Aristotle’s theory of *dynamis*.

As different as Hartmann’s and Hintikka’s interpretations are, they do have something in common. Both Hartmann and Hintikka analyze Aristotle’s *dynamon* solely in terms of modal operators, i.e., as being the Greek equivalent of something like “It is possible that ...” or, in logical notation, “ $\Diamond$ .” As I have argued in the last two sections, such a translation is both syntactically and ontologically misleading, if we care about the *dynamon* that is related to a disposition. Whoever, like me in this paper, cares about Aristotle’s theory of dispositions, has to interpret *dynamon* as a predicate modifier. Such an interpretation is both truer to the Greek syntactical constructions that Aristotle uses to ascribe dispositions and more appropriate for representing the ontological structure underlying these ascriptions.

## 9. The Megarian Challenge

Aristotle himself had to defend his theory of dispositions against an alternative position put forward by a group of philosophers called “Megarians,” who argue for a position very similar to Hartmann’s account of total possibility.<sup>22</sup> Aristotle describes this position as follows:

There are some who say, as the Megarians do, that a thing can act only when it is acting, and when it is not acting it cannot act, e.g. that he who is not building cannot build, but only he who is building, when he is building [...] (*Metaphysics* IX 3, 1046a 29–32)

The Megarians regard the actual realization of a property as a necessary and sufficient condition for having the disposition to manifest this property:  $x$  has a disposition to do or to be  $F$  at  $t$  if and only if  $x$  is actually  $F$  at  $t$ . Aristotle formulates no less than four arguments against this position, outlining the strange consequences (*atopa*, 1046a 33) that such a position would have:

- (1) Learning a craft is different from (and more difficult than) merely switching from non-employing to employing a craft. If the builder would not have any building disposition when not building, there would be no difference between a non-building builder and someone who is not a builder at all.
- (2) Also, there would be no difference between a thing being perceptible and that thing being perceived (and Protagoras would be right). For then a thing would be perceivable if and only if it would actually be perceived.
- (3) Also, people would many times become blind and deaf when closing their eyes or entering a silent room.
- (4) Finally, Megarians do away with change and becoming (and Parmenides rejoices), because if there is no principle of change to become something not yet existing, nothing can ever come into existence that is not yet present.<sup>23</sup>

To be sure, none of the above points constitute a knock down argument against the Megarian position. The Megarians could very well (and maybe they did) embrace the Parmenidean and Protagorean implications. However, any philosopher who, like Aristotle, sees some value in common-sense opinions and rejects positions that are more revisionary than necessary has plenty of reasons to reject the Megarian claim. This is the lesson Aristotle learns from the discussion of the Megarian position: Contrary to what the Megarians say, terms for the possession of a disposition and terms for their respective realization usually have different extensions. As a rule, dispositions are “two-sided.” It is possible to have a disposition and not to realize it at the same time.

<sup>22</sup> On the attempts to identify these philosophers cf. Jansen 2002, 139–143.

<sup>23</sup> For a formal account of this last argument cf. Jansen 2002, 146–149.

One therefore has to distinguish between the time *at which* something has a disposition and the time *for which* this disposition allows a realization. An owl does already at daytime possess the disposition to realize sophisticated night-time vision when it is dark. Here, daytime is the at-time, i.e., the time at which the owl has that disposition, whereas night-time is the for-time, i.e., the time for which that disposition allows a realization.

Disposition ascriptions in natural language contexts normally do not contain any reference to a for-time. And it would indeed be ontologically questionable to say that someone who can stand at day and at night has two distinct dispositions: one for standing at day and one for standing at night. Thus it should come as no surprise that some criticize such an analysis because “it does not make sense to speak of a capacity for standing-at-*t*, but only for standing.”<sup>24</sup> But there is help on the way: We can get rid of the for-time parameter without falling back into the Megarian mess. The idea is the following: As a relevant causal factor for its realization, a disposition precedes its effect. Thus, the realization of a hitherto unrealized disposition could happen at *some* time in the future, given that the disposition does not get lost in between. Hence if something has at *t* a disposition to do or to be *F*, this disposition at least allows its bearer to realize *F* at *some t\** immediately after *t*.

Logically speaking, what I suggest is to turn the free variable that the reference to the for-time has been in our previous formulations into a bound variable (bound by the existential quantifier “some”).<sup>25</sup> We started with ascribing a *dynamis* for a realization for a *specific* time in the future; but now we ended up ascribing a *dynamis* for a realization at *some* time in the future – lest it be that the disposition gets lost and thus ceases to exist. Thus to say that someone has now a disposition for standing therefore is to say that he has now a disposition for standing-at-any-point-of-time-*t*-in-the-future-as-long-as-the-disposition-does-not-get-lost.

This means that we interpret a *dynamis* as a causal factor that precedes its effect and that may (but need not) be co-present with its realization. This preserves a real distinction between at-time and for-time as well as the appearance of disposition ascriptions in natural language.

## 10. Dispositions, Realizations, and Their Conditions

In the Megarian picture, there was an intimate interconnection between having a disposition or *dynamis* and realizing it: According to the Megarians, something has a *dynamis* when and only when realizing it. In this picture,

manifesting a disposition is both necessary and sufficient for having the respective *dynamis*. Aristotle struggled hard to argue against the Megarian position, and to establish the possibility of unrealized dispositions. Consequently, realizing or manifesting a disposition can no longer be regarded as being a necessary condition for having a disposition. Nor can it be regarded as a sufficient condition for having a disposition, if co-presence with its realization is only a contingent and not a necessary feature of a *dynamis*.

As he disposed of the Megarian position, Aristotle presents a new necessary condition for having a disposition: For *x* to have a disposition to do or to be *F*, it must be logically possible to assume that *x* actually does or is *F*.<sup>26</sup> Such an assumption will lead to contradictions if we, for example, assume that the diagonal of the square has the disposition to be measured with the same unit as the length of one side.<sup>27</sup>

Now, when does a disposition become realized? This question does not arise in the Megarian picture, because there a *dynamis* does not exist at all before it is realized. Within the Megarian picture it may, however, be asked how and when a *dynamis* or its realization can come into existence. We do not know how the Megarians answered these questions, nor do we know whether the Megarians bothered to address them, in the first place. But since Aristotle allows for unrealized dispositions, there is a real question for him. He answers it by referring to the conditions that have to be met in order for a disposition to be realized:

[...] as regards *dynamis* of the latter kind [of the non-rational *dynamis*], when the agent and the patient meet in the way appropriate to the disposition in question, the one must act and the other be acted on [...]. (*Metaphysics* IX 5, 1048a 5-7)

In this passage, Aristotle presupposes the contrast between rational and non-rational dispositions. I will discuss this distinction and its relevance in the next section. Here I will focus on what this passage tells us about non-rational dispositions, i.e., such dispositions that can also be had by non-living things, plants, or beasts. Such dispositions are realized, when the bearer of the active power (the “agent”) and the bearer of the complementary passive disposition (the “patient”) meet in an “appropriate way.” This implies normally that the bearers of complementary active and passive dispositions are contiguous, but it may also include further appropriate marginal conditions. Note that these conditions are conditions for the realization of a disposition, not for having the disposition. Otherwise Aristotle would not have managed to evade the Megarian problems. Moreover, the realization conditions of a *dynamis* belong to the definition of the *dynamis* in question: If we talk about *dynamis* with different realization conditions, we talk about different kinds of *dynamis*. For

<sup>24</sup> Waterlow 1982, 40.

<sup>25</sup> For a formalization of this ideas cf. Jansen 2002, 152-154 and 194-196.

<sup>26</sup> On this principle cf. Weidemann 1999.

<sup>27</sup> The proof is to be found in Euclid, *Elements* X 11.7; it is alluded to in *Analytica Prima* I 23, 41a 26-7 and I 44, 50a 35-38. For the details of the argument cf. e.g. Jansen 2002, 159-162.

this reason, Aristotle does not need to include a “if nothing external interferences” phrase into his account when a *dynamis* gets realized.<sup>28</sup> Two standard realization conditions are that the *dynamis* does not cease to exist – which excludes that they are “finkish”, i.e. that they disappear when they are expected to realize themselves – and that no hindrances like antidotes are present. In this way, Aristotle has a plausible answer to two infamous problems of the contemporary debate of dispositions.<sup>29</sup> To be sure, Aristotle has no formalized account of the contrfactual conditional made up out of all these realization conditions. Nor does he – contrary to many modern theorists about dispositions – think that such a conditional provides a reductive “analysis” of *dynamis*-predicates. Rather, he puts it forward as a claim about certain entities in the world.

Finally, we may wonder whether the non-realization is necessary for having a disposition or not. That is, are “being F according to the disposition” and “being F according to the realization” compatible or incompatible predicates? There are certainly incompatible cases, like having a disposition for automatic self-destruction: Having such a disposition surely is not compatible with its realization, for if it is realized, there no longer is a bearer that could be the bearer of this disposition. On the other hand, there are cases where having a disposition clearly is compatible with realizing it. A medical practitioner, for example, does not lose his power to heal his patients when he actually does so. Otherwise he would be constantly loosing and re-gaining his power when beginning or ending the treatment of his patients.

### 11. Rational Dispositions

A very special variety of dispositions are the so-called rational dispositions (*dynamis meta logou*, cf. *Metaphysics* IX 2, 1046b 2). There are several reasons for calling them rational dispositions. First, Aristotle describes these dispositions by saying that they are present in the rational part of the soul. They cannot be possessed by inanimate things, plants, or mere beasts. Second, these dispositions are accompanied by a *logos*, a rational formula; normally, this is the definition of the realization that the disposition can bring about. Third, these dispositions are realized through ratiocination, i.e. by means of practical syllogisms. What this means can be illustrated with the help of the art of medicine, which is Aristotle’s paradigmatic example for this kind of disposition. The “rational formula” that accompanies the art of medicine is

the *logos* or definition of health. Starting from a definition like “Health is XYZ”, the medical practitioner can deliberate about how and whether to heal his patients:

Health is XYZ.

XYZ will come about if I do F.

I can do F.

Thus I will do F.

A special feature of rational dispositions is that they can have contrary realizations. Medical knowledge is normally used to heal patients, but an evil doctor can use the very same knowledge to kill people. Consequently, the art of medicine can have effects as distinct as health and death. Moreover, rational dispositions cannot be realized in as simple a manner as the non-rational dispositions discussed in the preceding section. It is clear that spatial vicinity between a medical practitioner and an ill patient does not automatically lead to a realization of the practitioner’s healing disposition. First, the practitioner has to decide to activate his medical knowledge. But even this is not sufficient: The practitioner has also to decide on his goal: Does he want his patient to be healthy or dead? Only then is he able to consider and decide on possible means for the end chosen by him. And only then will he act in the appropriate manner, which may bring about the patient’s health or the patient’s death.<sup>30</sup>

### 12. Natures and Habits

As already mentioned before, the different kinds of *dynamis* that I discussed up to now are not the only dispositional causal properties that Aristotle knows of. Other such properties are natures and habits (*physis* and *hexeis*). But what are natures for Aristotle? Aristotle often remarks that a nature, a *physis*, is a principle of movement.<sup>31</sup> *Physis* thus has the same genus as *dynamis*. But what is its specific difference? Aristotle spells this out in the following passage:

And I mean by *dynamis* not only that definite kind which is said to be a principle of change in another thing or in the thing itself regarded as other, but in general every principle of movement or of rest. For nature (*physis*) also is in the same genus as *dynamis*; for it is a principle of movement – not, however, in something else but in the thing itself *qua itself*. (*Metaphysics* IX 8, 1049b 5–10, transl. Ross, italics mine; cf. *De Caelo* III 2, 301b 17–19)

<sup>28</sup> On this cf. Molise 1975.

<sup>29</sup> On “finkish” (i.e. disappearing in a deceitful way) dispositions cf. Martin 1994; on antidotes cf. Bird 1998.

<sup>30</sup> For a more detailed account cf. Jansen 2002, 78–92.

<sup>31</sup> Cf. *Physics* II 1, 193a 28–30; III 1, 200b 12f; *De Anima* II 1, 412b 17; *Metaphysics* V 4, 1015a 15–19; XI 1, 1059b 17–18.

Thus whereas an active power is a principle of change “in another or as another,” a *physis* is a principle of change in a thing “in itself qua itself.” And whereas an active power needs a complementary passive disposition in order to be realized, there is no such need for a *physis*. If something has a *physis* to do or to be F, its realization depends only on the appropriate marginal conditions, but it does not require the spatial vicinity of the bearers of other causal properties.

Another kind of causal properties goes under the name of *hexis*. Like *dynamis*, *hexis* is a word with many different meanings, to which Aristotle dedicates a chapter in his dictionary of ambiguous philosophical terms (*Metaphysics* V 20). The noun *hexis* derives from the verb *hexein*, “to have.” As this etymology indicates, a *hexis* is in general either the having of something or that what is had by something. As a further possible meaning, Aristotle proposes the following definition:

*Hexis* means a disposition (*thabesis*) according to which that which is disposed is either well or ill disposed, and this either in itself (*keath hauto*) or with reference to something else (*pros allo*). (*Metaphysics* V 20, 1022b 10-12)

What is of particular interest for us, are the *hexeis* of the non-rational faculties of the soul, which determine both our emotional reactions and many of our actions. Traditionally, these *hexeis* are called virtues and vices: Virtues, if they dispose for good acting; vices, if they dispose for bad acting.

On first sight, a virtue like justice has a structure similar to a *dynamis*. At a given time, someone can have the virtue without acting justly, e.g., when sleeping. And when the just person is acting justly, the virtue of justice is thought to have a causal influence. Virtues (and vices) are realizable and causal properties, but Aristotle takes great pains in distinguishing non-rational virtues from rational *dynamis*. For we have seen that in the case of a rational *dynamis*, like the art of medicine, one and the same *dynamis* can be the cause of contrary realizations, i.e. of health and death. The art of calculating just prices is such a rational *dynamis* – but just as medicine can also be used to kill people, this art can be used to calculate and to charge unjust prices (cf. *Nicomachean Ethics* V 1; Plato, *Hippias minor*). He who has the virtue of justice does not only know what is just, he is also inclined to act justly. Whereas a rational *dynamis* allows for contrary realizations, a virtue is directed to one realization only. And while a rational *dynamis* needs an appropriate will and goal in order to be realized, a virtue informs the will by itself and does not need the addition of a goal of action from the outside.

### 13. Does the Unmoved Mover Possess Dispositions?

Finally, I want to turn to one of the most prominent elements of Aristotle's metaphysics, the godly unmoved mover, who keeps the heavens in circulation. In this context, one is inclined to inquire whether the unmoved mover possesses any dispositions, any *dynamis*. In *Metaphysics* IX 8, where Aristotle argues for the priority of realizations over dispositions, we find contradictory evidence on this matter. There (in 1050b 8-11), Aristotle says the following:

(Z1) “Every *dynamis* is at the same time [a *dynamis*] for the opposite.”

(Z2) “For, while that which is not capable (*dynamis*) of being present in a subject cannot be present,”

(Z3) “everything that is capable (*dynamis*) of being may possibly (*enthelthenai*) not be actual.”

Taken together, (Z1) and (Z3) suggest that what is eternal has no *dynamis*, because for him everything that is eternal is necessary and cannot not be otherwise (*De Caelo* I 12). But if we accept this, then we are forced to say that, whatever eternal things do, is not based on a *dynamis* to do this. But (Z2) seems to contradict this conclusion in articulating the following principle of enabling:

Everything that happens, happens because there have been *dynamis* that enabled this happening. Otherwise it would not have happened.

If this is universally valid, everything that eternal entities are or do is based on *dynamis*, too. We are obviously faced with a trilemma:

(A1) What is eternally F, is necessarily F.

(A2) What is eternally F, has the *dynamis* to be F.

(A3) All *dynamis* are two-sided.

These three propositions are jointly incompatible. Now (A1) is not a topic in *Metaphysics* IX, but it is defended in *De Caelo* I 12 and Aristotle does not challenge this principle anywhere else. We may thus reject (A2) or (A3). To reject (A2) is to reject the *Principle of Enabling*. To reject (A3) is to admit “one-sided” dispositions, that is, dispositions that are necessarily realized. That we do indeed have these options is confirmed through a passage in *De Interpretatione* 13:

For the term *dynamis* is not said with one meaning only (*one heptês*), but at one time it is true that it is realized, as when someone [is said] to be able (*dynamis*) to walk because he walks, and generally when something is able [to be something] because that which it is said to be able of is already realized; but sometimes because something may be realized, as when a man [is said] to be able to walk because he may walk. The latter belongs only to that which is changeable; the former can also belong to the unchangeable things. [...] Now, while the one way to be *dynamis* cannot truly be said of things

being necessary in the unqualified sense, the other [way to be *dynamon* can be predicated] truly. (*De Interpretatione* 13, 23a7-16; my translation)

The author here clearly distinguishes between inclusive and exclusive predication of being *dynamon* to do or to be something. In an inclusive manner, it is said, even unchangeable and necessary things (like the unmoved mover) can be said to be *dynamon* to do or to be something. Thus whoever wants to ascribe *dynamis* to the unmoved mover has to accept that these *dynamis* are never unrealized. Otherwise we should refrain from ascribing *dynamis* to the unmoved mover. This would still not imply that what the unmoved mover does is inexplicable, for, as we have seen, Aristotle knows principles of change and being like natures that go beyond the sphere of *dynamis*. And while the passage in *De interpretatione* 13 leaves open which horn of the dilemma is to be preferred, the passages in *Metaphysics* IX 8 suggest that Aristotle wants to restrict the term *dynamis* to two-sided dispositions. If this is indeed Aristotle's last word on the matter, then the unmoved mover cannot possibly have any *dynamis*.

#### 14. Is Aristotle's Account of Dispositions a Good Theory?

Aristotle's philosophy has often been criticized. Notably Hobbes dismissed Aristotelian thinking as "vain philosophy" and claimed "that scarce any thing can be more absurdly said in natural philosophy than that which is called Aristotle's Metaphysics."<sup>32</sup> In particular, Aristotle's theory of *dynamis* has been the object of many disputes. There are three standard objections against it: (1) Aristotle's powers, dispositions and potentialities create a ghostly world of *possibilia*, (2) they are explanatory idle (the *virtus dormitiva* objection), and (3) they are empirically inaccessible. I will discuss and reject each of these objections in turn.<sup>33</sup>

The first objection attacks the supposedly dubious ontological status of *dynamis*. They are said to form a "ghost world" in between being and not-being<sup>34</sup> or to be a kind of "half-being."<sup>35</sup> In fact, I have already answered this objection when explaining the *Beaver Principle* and the *Principle of Actuality*. A power or disposition is nothing ghostly nor something that has only half-being: It is a full-fledged property of a full-fledged thing. It is, however, a full-fledged property with a certain peculiarity: It is related to some action, passion or another property, which it enables or causes, and which is called the real-

ization of the disposition. Now it is possible, that a disposition occurs without being realized, but this does not diminish the ontological status of the disposition itself (but concerns only the non-occurring of the realization at this time).

The second objection says that referring to dispositions does not explain anything, but rephrases in new words the problem in question. Instead, it is claimed, science has to explain phenomena by describing the world's microstructure. This objection is often put forward in connection with Molière's joke at the expense of the medical profession in his *Le Malade Imaginaire*. There, a to-be doctor of medicine answers during his doctoral *visa voce* examination:<sup>36</sup>

BACHELIERUS: "I am asked by the learned doctor for the cause and reason that opium makes one sleep. To this I reply that there is a dormitive virtue in it, whose nature it is to make the senses drowsy." – CHORUS: "Very, very, well answered. The worthy [candidate] deserved to join our learned body."<sup>37</sup>

Though in the play the examination board is full of praise for this answer, it is not apt to increase the reputation of the medical profession from the perspective of the audience of the play. Obviously, this answer does indeed only rephrase the problem. It is not at all informative. Yet, this does not imply that science can do without dispositions. First, the answer is not informative because the question already presupposes that it is the opium which is the relevant causal factor. If asked, why someone fell asleep, it would actually be informative to point out that the job had been done by the opium and not by some other thing around in this situation. Second, how could an informative answer to the original question look like? We could point out that opium consists out of 37 alkaloids, among which is morphine. But this would only be a satisfactory explanation if we know that morphine has a *virtus dormitiva*. Of course, we can also ask why morphine has such a dormitive virtue. And we could refer to some molecular structures in our nervous system and to the molecular structure of the morphine. Again, this answer can only be satisfactory, if we know something about the dispositions of the molecular structures in question, e.g., that the morphine molecules have the disposition to bind to and to activate certain receptors in our nervous system, and that the respective parts of our nervous system have the matching passive disposition. Again, we do not have totally eliminated the talk about dispositions, but only replaced the talk about one disposition with the talk about another disposition. This shows that we do not explain certain events merely by referring to properties of microstructures and merely by using categorical property terms. We also need dispositional property terms.

The third objection claims that dispositions are empirically inaccessible,

32 Hobbes, *Leviathan*, ed. Tuck, 461.

33 Cf. also Jansen 2001, 276-278 and Jansen 2004.

34 Hartmann 1938, 5 ("Gespensterdasein").

35 Tegemeier 1997, 36-40 ("Halbexistenz").

36 On this scene and its background in the philosophical and theological discussions of Molière's time cf. Hutchinson 1991.

37 Cf. Molière 1926, VIII 328; the translation is Hutchinson's (1991, 245).

because we perceive only their realizations. Accordingly, dispositions have to be regarded as monsters of bad metaphysics. Obviously, we should be careful with this kind of argument: Otherwise one could argue analogously that the whole 'external world' is empirically inaccessible and thus a monster of bad metaphysics, because we are acquainted with 'internal' sense data only. The natural reaction to such an argument would consist in saying that we perceive the world *through* our senses and sense data. In a similar way, dispositions are not only described in terms of their realizations, but also recognised *through* them. Along such lines Aristotle admits the epistemological priority of the realization, through which the *dynamis* can be recognized (*Metaphysics* IX 8, 1049b 13-17). But although the realization is epistemically prior, the *dynamis* can nevertheless be recognized: By showing his students calculating a teacher of mathematics can provide evidence for the claim that his students have acquired the *dynamis* for calculations and thus prove the efficiency of his teaching (1050a 17-19).

Hence Aristotle needs not to be impressed by these three objections. His account of dispositions can still be regarded as a consistent ontology of causal properties with an enormous explanatory appeal.

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## Dispositions in Greek Historiography

BURKHARD MEISSNER

"Um von der Antike sich Rechenschaft zu geben, ihrem so weit reichenden Einfluss, gilt es zualleerst, beide Ohren fest zu verstopfen wie die Gefährten des Odysseus. Man kommt nicht weit, lauscht man dem christlichen Sirenenengesang, der seit Jahrhunderten ablenkt von den klassischen Texten".<sup>1</sup>

In the above passage, the German poet Durs Grünbein uses Odysseus as a metaphor for what lies between us and the classical tradition: The dangerous sirens represent what distinguishes the Christian Occident from the core of ancient paganism and European cultural identity. As a whole, Grünbein's essays in his book are concerned with identifying this ancient core as a necessary, though not sufficient condition for the existence of modern Europe: as *Antike Dispositionen* (*ancient Dispositions*), as if the ancient world had a disposition to modern development, which, in turn, would have been triggered somehow by historical circumstances and contingent factors. Ancient literature having but a disposition to framing notions of dispositions: Grünbein's metaphor provides us with a sufficiently complex picture of ancient historiography and its use of dispositional explanations as a precursor to the modern debate about dispositions in history, sociology and psychology. In looking at their ancient precursors, we should, however, neither expect much familiarity, nor complete difference.

What I am going to do is presenting a few examples of dispositional explanations and notions for dispositions from Greek historians between Herodotus and Polybius, which I think are representative not only of classical approaches to human behavior, but also of some ways we still speak about it in the social and historical disciplines.

Today, people talk about dispositions referring to a variety of things. The concept is especially prominent in teachers' training research, where educating

1 Grünbein 2005, 395. The text continues: "Mehr noch, man müßte zuerst die Stimme des eigenen Ichs unterdrücken lernen, denn die Beschreibungsgänge kommen von innen, aus dem eigenen Echochorum." (In order to render account to oneself for antiquity and its far-reaching influence, it is first of all necessary to plug one's ears tightly as the companions of Odysseus did. One does not come a long way listening to the siren song of Christianity, which has been a distraction from the classical texts for centuries. Moreover, at first one should learn to suppress the inner voice of one's self, because all the appraisements come from the inner side, from one's own echosphere.")