

An abstract painting of a human face in profile, facing right. The face is composed of numerous concentric, layered bands of color, including shades of purple, pink, blue, green, yellow, and brown. The background is dark, making the vibrant colors of the face stand out. The overall style is expressive and textured, resembling a cross-section of a natural material like agate or a layered geological formation.

From Natural Character
to Moral Virtue
in Aristotle

MARISKA LEUNISSEN

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OXFORD
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Published in the United States of America by Oxford University Press
198 Madison Avenue, New York, NY 10016, United States of America.

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CIP data is on file at the Library of Congress
ISBN 978-0-19-060221-5

1 3 5 7 9 8 6 4 2

Printed by Sheridan Books, Inc., United States of America

For Lisa

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ACKNOWLEDGMENTS

This book took many years and the help of many people to complete. It is my pleasure and honor to thank them here.

Let me start by acknowledging the two institutions that allowed me the leisure to start and finish this project. First, I had the good fortune to spend the 2010–2011 academic year at the Harvard University Center for Hellenic Studies in Washington, DC, as a residential junior fellow in Ancient Greek Studies. I would like to thank the Board and Trustees for granting me this opportunity and the wonderful fellows with whom I shared my time there for providing such a stimulating, interdisciplinary, and collaborative environment. Phil Horky deserves special thanks for always being willing to talk philosophy and to discuss my ideas about Aristotle, and for offering candid and concrete advice that has improved the book in more ways than I can indicate here. Second, I enjoyed a fellowship at the Institute for the Arts and Humanities at the University of North Carolina at Chapel Hill during the spring of 2016, which allowed me to complete and revise the manuscript in the company of a most wonderful and intellectually diverse group of fellows. I would like to offer special thanks to Michele Berger for her leadership and guidance throughout this semester.

The book has gone through many drafts and stages, and I owe many thanks to all those who have participated in the discussion on the various conferences, colloquia, and classrooms where this material was presented, but especially to my distinguished colleagues David Reeve and Jim Leshner; to Devin Henry, Jim Lennox, Brad Inwood, Emily Austin, and Kyle Driggers; and to the readers at Oxford University Press (OUP) for their excellent feedback and detailed criticisms on parts or wholes of the book, and for their

encouragement and support. I also note my gratitude to Peter Ohlin at OUP for his patience and help on the manuscript.

The book is dedicated to my daughter, Elisabeth Madelief Laux: In mijn ogen ben jij perfect en Aristoteles had het duidelijk mis. Je ben mijn grootste trots en ik heb je lief met heel mijn hart.

Some of the materials of this book have been published elsewhere, and I would like to thank the publishers and the editors for their permission to reprint the revised versions here: chapters 1 and 2 grew out of a paper published as “Aristotle on Natural Character and Its Implications for Moral Development” in *Journal of the History of Philosophy* 50.4 (2012): 507–530. Chapter 4 is a revised and expanded version of “Becoming Good Starts with Nature: Aristotle on the Moral Advantages and the Heritability of Good Natural Character,” published in *Oxford Studies in Ancient Philosophy* 44 (2013): 99–127. And the basis for chapter 5 was published as “Perfection and the Physiology of Habituation in Aristotle’s *Ethics* and *Physics* VII 3,” which is chapter 12 in *Aristotle’s Physics: A Critical Guide*, edited by Mariska Leunissen (Cambridge, UK: Cambridge University Press), pp. 225–244.

INTRODUCTION

How does one become a morally good or virtuous person? For Aristotle, this question is of crucial importance because only in virtuous activity can one live the kind of rich and rewarding life that he considers constitutive of human flourishing or happiness (ἡ εὐδαιμονία). Traditionally, studies of Aristotle's views about moral development and his conception of character (τὸ ἦθος) focus almost exclusively on his ethical works and on his description of the acquisition of character virtue (ἡ ἠθικὴ ἀρετή) by the freeborn, well-raised male citizens.¹ Much progress has thus been made in our understanding of Aristotle's ethics, but the elitism that is present in his ethical treatises is usually ignored, and some even suggest that *anyone* can become virtuous and happy through habituation, as long as one tries hard enough.² This book aims to counterbalance this tendency in the past and current scholarship on Aristotle's ethics by approaching the issue of character primarily from a biological perspective and by including from the outset Aristotle's views about natural character and its possibilities for moral development in nonhuman animals, women, barbarians, and "natural slaves."

Many of these latter views are recorded in the most morally repugnant, politically and psychologically antiquated, and therefore (sometimes rightfully) neglected parts of the Aristotelian corpus. This neglect is of course understandable, especially for those scholars who have wanted to

¹ See, e.g., Annas 1993, Nussbaum 1986, and Sherman 1989.

² In many cases, the debate focuses on how "humans" or "persons" should live and how they can achieve happiness according to Aristotle, thereby glossing over the gendered and elitist perspective that he offers. See most recently, for instance, the introduction in Polansky 2014b, and Roche 2014 and Inglis 2014 in the same volume. Notable exceptions are Burnyeat 1980 (p. 81) and Hutchinson & Johnson 2014 (p. 385).

demonstrate Aristotle's relevance for modern approaches to (virtue) ethics. However, a full understanding of Aristotle's ethics also requires an understanding of the natural challenges those people face, who, according to Aristotle, are permanently excluded from the life of virtue and happiness, and an understanding of why he believes that no amount of habituation can help them overcome those natural challenges. This in turn helps shed light on the mechanisms through which Aristotle thinks some men do become virtuous and happy, and on why this kind of achievement is possible only for a select few.³ In his biological works, Aristotle has a lot to say about "natural character traits" in humans and nonhuman animals alike, and about their relation to emotion and action as well as to external factors such as environment and diet that influence and possibly change these traits for the better or the worse, temporarily or permanently. As I will argue in this book, Aristotle considers the process of becoming virtuous as extremely difficult,⁴ because even if the external circumstances and political organization and educational systems are ideal, it still requires one to overcome many natural obstacles, and he thinks that for most people, especially most women and barbarians, those obstacles are simply too great. These morally unlucky groups can perhaps acquire the "natural virtues" and participate in some form of living well, which will offer some "sweetness" and well-being to their lives, but can never acquire full virtue and happiness.

In the ethical treatises, character is discussed mainly in its role as the bearer of morality:⁵ it is a virtuous state (ἕξις) of character that disposes one to perform actions that hit the mean and that are therefore praiseworthy. Aristotle emphasizes that these states of character—and not just actions—are "up to us and voluntary" (see, e.g., *EN* III 5, 114a4–31 and b28–29: ἐφ' ἡμῖν καὶ ἐκούσιοι). Provided that the freeborn men receive the appropriate

³ Aristotle characterizes his audience in the *Nicomachean Ethics* as young men who have been raised well, are well educated, and are already motivated to become virtuous and who want to make others virtuous as well, either as lawgivers or as heads of their households (see, e.g., *EN* I 3, 1094b27–1095a8; *EN* I 13, 1102a7–10; and *EN* X 9, 1179b7–10; cf. *Pol* III 6, 1282a3–7). See also Hutchinson & Johnson 2014 (pp. 383–389) and Schofield 2006 (p. 310): "The *EN* and *Politics* alike are best interpreted as writings that are addressed not to individual in their private capacities, but to someone who aspires to be a politician—that is to say, a lawgiver."

⁴ A point that Aristotle of course makes himself explicitly in *EN* II 9, 1109a24–b1, but that has not always been fully appreciated.

⁵ There is much debate about whether Aristotle's excellences of character (and ancient ethical theories in general) are moral in a modern sense; see, e.g., Annas 1996, Irwin 1985, and Williams 1985. For the purposes of this book, I am using the term "moral" to differentiate the excellences of character Aristotle discusses in his ethical treatises from the character traits he discusses in the biological treatises, which I refer to as "natural" character traits.

moral education from childhood and are raised in a properly organized city, they can shape their own character by performing right and just actions. Character virtue as the *unified* psychological state that results from this kind of habituation (for Aristotle, one cannot have one character virtue without having them all as one single condition of the soul and without being practically wise at the same time)⁶ is stable across time and robust across situations and therefore reliably predicts and guides virtuous actions.⁷

By contrast, in his natural works, Aristotle treats character as one of the four biological differentia by which animals differ from one another (the other three being their ways of life, actions, and parts), and he defines it as a *natural capacity* (φυσική δύναμις) of the soul that predisposes an animal's (nonmoral) emotions, actions, and even “cognitive” acts related to survival and procreation. Character in this biological context thus encompasses both traits that are connected to nonrational desires and emotions, such as “courage” and “jealousy,” and intellectual capacities, such as “prudence” or “craftiness,” which for nonhuman animals are grounded in their perceptive soul only. For instance, Aristotle characterizes the cuckoo as being both extremely cowardly, because it allows itself to be pecked at even by little birds, and prudent, because it realizes that it cannot protect its own offspring and therefore lays its eggs in the nests of other birds.⁸ And while these natural character traits reliably predict and guide all kinds of behaviors, Aristotle believes that those traits themselves are highly causally dependent on the organism's physiological makeup; that is, on what Aristotle calls their “material nature,” which includes the particular elemental mixture of their blood and their level of vital heat. Because of this, these traits are easily changed—both long term and short term—by efficient causes that are not all up to that organism, such as climate, diet, aging, and disease. In addition, since the difference between male and female is in an important way tied to differences of the more and

⁶ See *EN* VI 13, 1144b35–1145a2; note that according to Aristotle the unity thesis holds only for moral virtue or virtue in the strict sense, *not* for the natural virtues (which are habituated stable dispositions not yet integrated with practical wisdom) or natural character traits (which are capacities humans have by nature and from birth).

⁷ It is this globalist “personality” view of character, based almost exclusively on interpretations of Aristotle's *Nicomachean Ethics*, that has continued to inspire virtue ethicists and moral psychologists to the present day, but which—more recently—also has attracted considerable criticism for falsely assuming the existence of global personality traits and for underestimating how much of our behavior is influenced by (uncontrollable) situational factors. For a situationist critique of Aristotle's concept of character as being psychologically implausible and empirically inadequate as an explanation for human action, see Doris 2002 (especially pp. 1–27), Merritt 2000 (pp. 365–366), and Merritt et al. 2010 (pp. 356–360).

⁸ See *HA* IX 29, 618a25–30; cf. *GA* III 1, 750a13–15.

less in the material nature and vital heat of animals, character profiles tend to be gendered too. When it comes to their character traits, women turn out to be at a natural disadvantage: despite the fact that natural character is for the most part highly changeable, Aristotle believes that the natural character traits of women are simply “too far away on the road toward virtue” to be able to reach their goal, and that their deliberative capacities are naturally lacking in a way that makes the acquisition of practical wisdom and hence full moral virtue impossible.

As a result, the gender and the natural character traits that one has from birth, as well as the environment in which one grows up, the diet one follows, the bodily exercises one performs, the paintings and music one is exposed to throughout childhood, etc., all can contribute to or impede the acquisition of virtue and in some cases even make it impossible. In other words, although Aristotle never denies that the shaping of our moral character is “up to us” or that character—whether moral or natural—guides actions, his biological views indicate that natural character traits, given their physiological nature,⁹ are not robust but are changeable by various external factors, such as, importantly, climate and environment.¹⁰ Not all these factors are in our control, but all of them have the capacity to push natural character traits either toward or away from natural virtue and thereby make the path toward full moral virtue easier or more difficult. This book, then, aims to document this malleability of natural character and to show that factors such as gender, diet, climate, and health can have important ethical consequences, in particular with regard to moral luck: Aristotle believes that only very few humans possess the appropriate biological traits that make the transition to moral character possible at all, which means that not all humans possess equal opportunities for the development of virtue and hence for living a flourishing, happy life.

⁹ On my reading, Aristotle thus appears to be a predecessor of the view according to which personality has a biological basis and that traces back personality traits to brain structures and neural mechanisms (which somewhat parallel soul structures and blood properties in Aristotle’s account). On this view, see especially Eysenck 1967, Gray 1982, and Canli 2006.

¹⁰ Although Aristotle’s version of “environmental determinism” is one of a kind, it is important to realize that his views are much indebted to and influenced by the debates of his time about the relation between the character of a given people and the influence of nature versus convention in shaping this character. On this, see in particular the Hippocratic *Airs, Waters, Places* (passim), Herodotus’s *Histories* (especially II 77, VII 101–105, and IX.122), and Plato (especially his *Menexenus*, *Laws* 747b–e, *Republic* 434e–436a, and *Timaeus* 24c–d). I hope to explore the relations between Aristotle’s views and those of his contemporaries elsewhere, but see Sassi 2001 (pp. 82–139) for the most current overview of ethnographical theories in the ancient world, Jouanna 1999 (pp. 210–232) on ethnography in the Hippocratics, Thomas 2000 (pp. 102–134) on Herodotus, and Kamtekar 2002 on Plato.

Rather, habituation and moral education will be successful mostly for those “lucky” freeborn men who are already naturally disposed toward the development of virtue.

In working out Aristotle’s views about natural character and its role in the moral development of citizens of the ideal city, women, barbarians, and natural slaves, I will rely on the following four core assumptions for which my book provides further support.

First, when Aristotle talks about character, he differentiates between *natural character traits*, which are, metaphysically speaking, “dualizing, rational capacities” that can be developed into two directions—that is, toward natural virtue or vice—by desire or wish;¹¹ *natural virtues*, which are single dispositions resulting from the frequent actualizations of the individual natural capacities in the direction of virtue;¹² and *moral virtue*, a unified psychological disposition involving full character virtue and practical wisdom that results from successful habituation.¹³ Furthermore, and this is crucial for my discussions in Part I of this book, for Aristotle, natural character traits are capacities that both humans and nonhuman animals possess. Aristotle argues in the *History of Animals* (*HA* VIII 1, 588a18–b3) that the personality traits such as courage that animals have are *similar* to the personality traits of humans, while making clear that their intellectual traits such as craftiness are merely *analogous* to the ones humans have, since nonhuman animals do not possess the soul capacity of reason. On the basis of this explicit comparison between the character types of human and nonhuman animals found here and elsewhere in the biological treatises,¹⁴ we can assume that whatever Aristotle says about the natural character of animals is also relevant for his views about the natural character traits of humans, and that there is thus no deep metaphysical distinction between humans and nonhuman animals.¹⁵

¹¹ See *Meta* IX 2, 1046a36–b7, and IX 5, 1047b35–1048a5; I discuss the “metaphysics” of character in more detail in chapter 5.3.

¹² Cf. *EN* VI 13, 1144b4–9, and perhaps *EE* III 7, 1234a24–30: character traits tend by nature toward natural virtue, which suggests that virtue is the per se realization of the natural capacities for character.

¹³ On the relation between “natural” and “moral” virtue, see Lennox 1999b.

¹⁴ And even sometimes in the ethical treatises: see, e.g., Aristotle’s claim in *Pol* VIII 4, 1338b17–19, that among barbarians and animals “we see that courage follows the wild, but even more the tame and the ones with a lion-like temper” as proof for the mistaken focus of the Spartans on the military exercise of their children, suggesting that natural courage at least is instilled in the same way among humans and nonhuman animals.

¹⁵ See also Lennox 1999b, pp. 11 and 16–18.

It has sometimes been suggested that animals cannot truly experience emotions because they are incapable of reasoning and belief, and that therefore Aristotle's attribution of personality traits to animals (and not just their intellectual traits) must be only by analogy or must be interpreted as metaphorical.¹⁶ While it is true that Aristotle provides a cognitive account of emotion in the *Topics* and his *Rhetoric*,¹⁷ and while it is not easy to construe a satisfactory account both of human and animal emotion *solely* on the basis of their shared possession of the capacity of imagination,¹⁸ there is no reason *not* to take Aristotle's attribution and causal explanation of the character traits of nonhuman animals in the biological treatises at face value. There are no indications in the text suggesting that Aristotle perceives of his account of emotion as involving a sharp distinction between human and animal emotion such that this would also entail a sharp distinction (i.e., one that would involve a distinction in kind rather than in a distinction of the more and the less) among the kinds of personality traits they possess. I also reject interpretations of Aristotle's attribution of character traits of any type to animals as mere metaphors, since these interpretations clash with Aristotle's own explicit scientific practice of appealing to them as causally relevant differentia of animals in his biology.¹⁹

Second, my discussion of natural character throughout this book will stress the importance of material natures and their relative causal independence from teleological causation in the determination of what kind of natural character traits a given living being has. Famously, Aristotle argues that natural processes that happen always or for the most part and that have regular good outcomes are due to natural teleology, which in living beings means due to the goal-directed actions of natures as internal principles of motion and rest acting in accordance with form. These "formal natures" (which are

¹⁶ See especially Fortenbaugh 1975, pp. 9–15 and 93–103.

¹⁷ See, however, the important caveat presented in Cole 1992, 46n.6: "This use of the *Rhetoric* as a key text [for a cognitive theory of emotions] may be problematic, however, since by its very subject this book has already delimited its terrain to applications of concepts in situations at least potentially *rhetorical*; it would thus appear to have ruled out animal behavior from the start. . . . We would expect that the way that emotions are treated in the *Rhetoric* would be heavily weighted toward distinctively human ways of experiencing appeals to them, i.e., *via* cognitive channels."

¹⁸ This has been attempted in, for instance, Sorabji 1993 (pp. 55–58) and Cooper 1999d (pp. 416–417).

¹⁹ I also follow Balme 1987 (pp. 16–17) in attributing the authorship of *HA* VIII–IX to Aristotle, and not to Theophrastus, as early critics of these books of the *HA* have suggested: see, e.g., Dirlmeier 1937 (pp. 55–60) and Fortenbaugh 1971 (p. 152).

identical to souls in living beings) conditionally necessitate the coming into being of certain materials and structures and organize them in ways that are beneficial and functional for the living being. Thus, for the most part, living beings possess the features they have—and have them in the particular locations where they are, for example—for the sake of something. For instance, birds are essentially flyers, and they possess wings for the sake of flying: the formal natures of birds produce or “craft” wings, so to speak, for the sake of realizing the function of flying. However, Aristotle also describes cases in which materials come to be of material necessity and do not appear to be conditionally necessitated for the sake of something, but in which they are then used by these formal natures for the production of parts that are beneficial to the animal in question. In these latter cases, functional features emerge, as it were, from the potentials the “extra” materials happen to have. The process is still teleological because it is the goal-directed actions of the formal natures that produce the useful parts, but the parts themselves are not realizations of preexisting potential for forms, and their function is not specified by the definition of the substantial being of the animal in question. Rather, their use is in important ways “dictated by” the potentials of the materials available: for instance, earthen residue has “defensive potentials” according to Aristotle and therefore gets used by nature for the production of defensive parts, such as horns and talons.²⁰ In this book, I argue that natural character, in a way, is more akin to features such as horns and talons than to features such as wings. That is, although animals have a character profile due to their form and soul (i.e., whether the living being in question possesses “character” as one of its differentia is specified by the definition of the substantial being of that living being, in the same way that this definition specifies its mode of locomotion, such as flying), the *species-specific* character profile the animal ends up having is not specified by its form but instead is due to its material nature (in the same way that horns have the defensive potential they have in virtue of being constituted out of earthen material). Animals thus have their species-specific character profile not because that character is part of their definition, but because that is the kind of character profile that emerges by material-efficient causation from the materials they are constituted from: for example, thick, hot blood produces rashness; cold

²⁰ See, e.g., *PA* II 9, 655b2–12, and *PA* III 2, 663b25–35. For the argument that in Aristotle’s biology not all features are determined top-down by the animal’s form, but that material necessity can play an independent causal role in the formation of organic parts even in teleological processes, see Leunissen 2010, especially pp. 76–111.

blood, cowardice. As Aristotle puts it, differences in the material makeup of the animals' blood produce differences in their character profiles.²¹

It has been suggested that although Aristotle explicitly uses “productive” language characteristic of material-efficient causation when describing the relation between blood type and character profile in his biology, we should not interpret this language causally. On this reading, when Aristotle says, for instance, that thick and hot blood is productive of strength and rashness, he is not presenting us with the material-efficient causes of natural character but instead identifies a correlation between the blood type and character profile, while the “real” cause for why animals have the natural character profile they have is their form. Thus, bulls are strong and rash because those character traits are included in the definition of their substantial being, and if there is any causal relation at all between these traits and their blood, it is one of conditional necessity (i.e., bulls have thick and hot blood *for the sake of* making them strong and rash, which are essential traits that need to be realized). Note, however, that the few explanations Aristotle offers for why animals have the natural character traits they have all associate those traits with components of the material natures of those animals, and, in addition, that for Aristotle “correlation implies causation”: if certain character traits always go together with certain material natures, they *must* be causally connected and cannot be the product of chance alone. They always go together either because the forms of animals conditionally necessitate these material natures for the sake of producing those particular character profiles, or because these material natures produce these particular character profiles by material necessity. There is no evidence in Aristotle’s corpus to suggest that he believes the first option (not once does he explain character in terms of the definition of an animal), while the most natural reading of Aristotle’s discussions of character fits seamlessly—or so I will argue—with the second option. Thus, Aristotle does not think that the cowardliness of cuckoos, for instance, is part of the definition of their substantial being or that cuckoos have a cold material nature for the sake of being cowardly. Instead, cuckoos have a cold material nature (one that is colder even relative to other birds), and this relatively cold nature is evidenced through and is causally

²¹ See *PA* II 2 and II 4, *passim*, and especially *PA* II 4, 651a12–17: “It is reasonable that of many features the cause is the nature of the blood, both with respect to character among animals and with respect to perception: for it is the matter of the entire body. For nourishment is matter, and blood is the last stage of nourishment. It therefore makes a great difference whether it is hot or cold, thin or thick, turbid or pure.”

responsible for their cowardliness.²² As a result, the actions and way of life of the cuckoo are teleologically organized with a view to this cowardly character, and not the other way around.²³

Third, since natural character traits are the starting points of moral development (from these the natural virtues develop through habituation and then ultimately in the successful cases, once practical wisdom has been acquired as well, full virtue arises as the perfection of human beings) and since these natural character traits are causally connected to the species-specific and individual material nature of the humans in question (and therefore more broadly also to their bodily conditions), the concept of habituation needs to be understood more broadly than the one Aristotle develops in *EN* II 1–6. In these latter chapters, habituation is discussed mostly as a process of psychological change and improvement—one that has perhaps physiological counterparts, but one that is essentially and primarily a matter of forming correct intentions and acquiring the right kind of dispositions and practical knowledge by repeatedly performing virtuous actions. In contrast, the conception of habituation presented in this book takes Aristotle’s account of habituation in the *Politics* seriously, as involving both a rational and a nonrational component and including practices such as eugenics, physical conditioning and bodily exercises from childhood onward, and a training of moral perception that requires one to listen to the right kind of music and receive the right kinds of visual models. The acquisition of moral virtue emerges from this analysis as a long and difficult process, requiring a person to make qualitative changes both in soul *and* in body, in reason and in desires, and it is therefore best understood as a form of perfection as discussed in *Physics* VII 3.

Finally, on the assumption that Aristotle is a systematic philosopher, I draw liberally from all his extant writings in order to present in this book as complete a picture of the biological underpinnings of Aristotle’s ethics as possible. In addition, I use his views about character in the natural treatises to shed light on his views about character in the ethical treatises, and vice versa. For Aristotle, political science and natural science are separate sciences (the first is practical and concerned with action;²⁴ the second is theoretical and concerned with knowledge for its own sake²⁵), and he considers both of them as autonomous, in that both generate their own body of knowledge

²² *PA* II 2, 647b35–648a11; *PA* II 4, 651a12–17; *GA* III 1, 750a11–13.

²³ *HA* VIII 1, 588a17–18; cf. also *Pol* I 8, 1256a19–30.

²⁴ *EN* II 2, 1103b26–31, and II 4, 1105b12–18; cf. *EN* VI 7, 1141b8–9.

²⁵ *PA* I 1, 639a12–15; see also *EN* VI 7, 1141a28–33, and VI 12; *Meta* VI 1 and XI 7.

through the use of their own, domain-specific principles, which can be used for demonstrations only within their own scientific domain or with regard to a subordinated science (otherwise this would constitute a violation of Aristotle's rules against the transfer of principles or *metabasis* as presented in the *Posterior Analytics* I 7). Given this clear distinction between the two sciences, scholars of Aristotle sometimes assume that the ethical and political treatises can or even should be studied independently from Aristotle's other scientific treatises, including his biological works. That is, even though it is generally acknowledged that Aristotle's political science was not developed in a philosophical vacuum and that it therefore presupposes, among others, a *rudimentary* familiarity with Aristotelian metaphysics (involving forms and capacities that need to be realized) as well as with his natural science (involving a theory of natural teleology and a psychology that divides the soul into at least a rational and a nonrational part), some scholars believe that neither Aristotle's intended audience nor the modern reader needs any *specialized* knowledge of Aristotle's natural science in order to understand his views about the human good or in order to become good oneself.²⁶ This book makes the case that this view is mistaken and that, instead, Aristotle believes that at least *some* of the knowledge produced by natural science is "foundational" for political science, in the sense that having knowledge of the facts (*to hoti*) *about human life and nature* is an important prerequisite to the political scientist's task of perfecting or completing human nature so as to make a person good.²⁷ Aristotle claims that "art in some cases completes what nature is unable to achieve, in other cases imitates it,"²⁸ and in a sense "political art" is no exception: it too completes human beings in a way that

²⁶ See, e.g., Kraut 2010b, section 3.2: "Even though Aristotle's ethical theory sometimes relies on philosophical distinctions that are more fully developed in his other works, he never proposes that students of ethics need to engage in a specialized study of the natural world, or mathematics, or eternal and changing objects. His project is to make ethics an autonomous field, and to show why a full understanding of what is good does not require expertise in any other field." In Barney 2008 (pp. 302–303), about "biological" readings of the function argument in *EN* I 7: "Such readings operate at an unsatisfying remove from the text of the *Ethics*: this line of argument cannot be one that Aristotle expects his readers to extract from the reasoning he presents. . . . Still, it seems fair to say that nothing at 1097b24ff., or earlier in the *Ethics*, looks much like a cue to the reader to import wholesale the teleological framework of Aristotelian natural science." In Reeve 2014, p. xxxvi: "In the only really important sense, then, politics has political facts as its sole foundations. Biology, metaphysics, and other bodies of knowledge have no foundational role in politics whatsoever."

²⁷ For a more elaborate defense of this view, see Leunissen 2015a, pp. 214–231. Cf. Aristotle's characterization of political science in *EN* X 9, 1181b15, as "philosophy concerning human matters"—ἡ περὶ τὰ ἀνθρώπεια φιλοσοφία.

²⁸ *Ph* II 8, 199a15–17; cf. *Ph* II 2, 194a21–23.

cannot be achieved by nature alone,²⁹ but that also cannot be achieved by going against human nature.

Characterizing natural science as foundational for political science in this way entails that the theories that are produced by political science for the sake of perfecting human nature have to be both *informed by* the relevant natural scientific facts about human nature in order to be maximally practically successful and *tested against* the lives humans actually live in all its dimensions, including, at the most basic level, those that pertain to survival and reproduction, biological well-being, and the fact that humans are political animals.³⁰ For instance, Plato's idea to produce unity in the ideal city by making all possessions—including women and children—common needs to be rejected according to Aristotle because it conflicts with a basic fact about human nature: humans have a natural love of the self, which “nature did not give in vain” to them, and therefore a policy that rejects private possessions should be rejected not because it is immoral, but because it is unnatural for people to live that way, and therefore a city without private possessions would not be successful at making its citizens happy.³¹ Similarly, Aristotle argues that the happy life is self-sufficient, but the kind of self-sufficiency at stake here—that is, the concept of self-sufficiency that can pass the above-mentioned test and therefore becomes part of Aristotle's practical political or ethical apparatus—cannot be a solitary one. Humans are political animals, and even if they could live by themselves they would not want to,³² and even

²⁹ *Pol VII* 17, 1336b40–1337a3; cf. *EE VII* 2, 1237a2–3.

³⁰ For this criterion, see *EN X* 8, 1179a16–22: “The opinions of the wise, then, seem to harmonize with our accounts. Such views therefore also possess some trustworthiness, but truth in practical matters is judged on the basis of actions and life (τὸ δ' ἀληθὲς ἐν τοῖς πρακτικοῖς ἐκ τῶν ἔργων καὶ τοῦ βίου κρίνεται), for in them lies the deciding factor (ἐν τοῦτοις γὰρ τὸ κύριον). We should therefore examine what has been said by applying it to [our] actions and life, and if they harmonize with the actions we should accept it, and if they conflict [with our actions], we should assume them to be [mere] words.” I take it that whatever facts or definitions or principles concerning the human good a political scientist discovers, Aristotle believes that they must always be evaluated for their truth *for action* and *for the realization of the human good*. If they do not harmonize with our experience of human actions and life from which humans, after all, reach their conception of happiness (*EN I* 5, 1095b14–16), they ought to be rejected as having no credibility and as being useless “with a view to life” (*EN X* 1, 1172a34–b7; b6: πρὸς τὸν βίον).

³¹ *Pol II* 5, 1263a38–b3.

³² See *EN I* 7, 1097b6–16: “The same result also becomes evident from a consideration of self-sufficiency. For the complete good seems to be self-sufficient. But what *we call* (λέγομεν) self-sufficient is not [what is sufficient] for a single person by himself, living a solitary life, but what also pertains to his parents and children and wife, and, in general, to his friends and fellow-citizens, *since* humankind is by nature political (ἐπειδὴ φύσει πολιτικὸν ὁ ἄνθρωπος). . . . What is self-sufficient *we posit* (τίθεμεν) to be that which makes all by itself a life choiceworthy

the life of contemplation—although it is the *most* self-sufficient—still cannot be devoid of all the necessities of life.³³ Natural scientific facts about human nature thus do not restrain ethical and political theorizing itself, but they do play a crucial role when it comes to deciding whether a theory is to be considered “mere words” or instead something that should be accepted as furthering the practical goal of making men “good and capable of fine deeds.” In practice, this means that students of Aristotle’s political science need to be well educated enough in natural science to be able to judge which biological human attributes need to factor into their political theorizing and to determine how they need to be incorporated in order to keep their efforts on track toward identifying (and subsequently building) the best cities for the sake of producing *human* happiness.

The book consists of two parts. Part I offers, in three chapters, a comprehensive treatment of Aristotle’s conception of natural character as it is developed in the biological treatises, and it shows how this conception complements Aristotle’s treatment of moral character as familiar from the ethical treatises. In particular, I discuss the role of natural character in moral development as it comes up in the context of Aristotle’s advice to lawgivers for building ideal cities and for selecting men with the best natural character traits as the first generation of citizens.

Chapter 1 starts with Aristotle’s infamous ethnographical comment in the *Politics*, in which he claims that the natural character traits a given tribe of people has, and the kind of natural political organization this character profile gives rise to, correlate with the environment and the region of the then-known world in which they live. The comment is followed by the practical advice to lawgivers who are in the process of creating their own ideal city to select only those men as the future citizens whose natures are “well mixed” and therefore “most easily led to virtue.” In the subsequent sections, I turn to Aristotle’s discussions of natural character in the biological treatises to show how the species-specific character profile that a species of animals has, including human animals, depends on the particular material mixture of their blood, and that by “well mixed” Aristotle has in mind the kind of mixture of blood that is hot, pure, and moist and that therefore gives rise to natural courage and intelligence. I then explain how the various organs in

and lacking in nothing. Such *we believe* (οἰόμεθα) happiness to be.” Cf. also *Pol* III 6, 1278b19–21, and *EE* VII 10, 1242a19–28.

³³ See *EN* X 7, 1177a28–29; *EN* X 8, 1178a25–26; and *EN* X 8, 1178b33–35: “Being a human, he will also require external prosperity: for our nature is not self-sufficient with regard to contemplation, but it is necessary that the body is healthy and that food and other care is available.”

the human body contribute to the production of blood that is according to Aristotle of the highest quality of all animals.

Chapter 2 discusses the changeability of natural character under the influence of factors such as diet and environment and thereby offers an explanation for the individual differences of the more and the less within a species-specific character profile. That is, while ideally all humans are by nature courageous and intelligent, and while all humans are *more* courageous and intelligent than any other kind of animal, some humans are by nature more courageous or intelligent than others, while others are more cowardly and less intelligent, and these differences matter for the ease with which one can acquire virtue. After identifying the material-efficient causes that produce these natural variations among the character profiles of people, I discuss what this means for the moral development of certain “barbarians” and “slavish people” living in different climatic regions of the world, and I offer reasons against identifying all these latter groups as counting as “natural slaves” for Aristotle.

Chapter 3 offers a brief but speculative suggestion for how Aristotle might think lawmakers can identify future citizens with good natural character traits in practice by turning to physiognomic passages in Aristotle. I argue that while the *Prior Analytics* discusses only the logical and ontological conditions that would make a science of physiognomy possible, and thus leaves it in the middle whether Aristotle actually thinks such a science is possible or is one he practices himself, his treatment of physiognomic signs in the *History of Animals* as basic facts about the faces of animals provides evidence for Aristotle’s own use and endorsement of physiognomy in a biological context. There was a widespread practice among physicians and philosophers of Aristotle’s time to appeal to physiognomy for diagnostic purposes, and it is at least possible that Aristotle did too.

Part II discusses, also in three chapters, the psychophysical changes in body and soul that one is required to undergo in the process of acquiring moral virtues. My goal here is to show that Aristotle’s treatment of natural character in the biological treatises as presented in Part I provides the conceptual and ideological foundation for his views about habituation as developed in the ethical treatises, thus taking seriously Aristotle’s claim that nature is one of the factors through which men become “good and capable of fine deeds.”³⁴

³⁴ See *Pol* VII 13, 1332a38–40: ἀλλὰ μὴν ἀγαθοὶ γε καὶ σπουδαῖοι γίνονται διὰ τριῶν. τὰ τρία δὲ ταῦτά ἐστι φύσις ἔθος λόγος. Cf. also *EN* X.9, 1179b20–21; *Pol* VII 15, 1334b6–28; and *EE* I 1, 1214a14–25.

Chapter 4 takes up Aristotle's theory of eugenics, which encourages lawgivers not to leave the birth of offspring in their cities up to chance, but to put policies in place that promote the birth of male offspring with the type of natural character traits that are most conducive to moral development. I argue that the specific policies Aristotle recommends to these lawgivers take their facts from his biological theories about reproduction and sexual differentiation. I also discuss Aristotle's conceptions of "good birth" and "natural talent" that are mentioned outside his biological treatises but that he claims can be acquired only through birth and that bring natural advantages to their possessors in terms of acquiring virtue more easily.

According to Aristotle, habit—and not nature—is the most important factor in the moral development of men, since it can override nature and prepares the ground for moral education. Chapter 5, then, offers a psychophysical account of how habituation is supposed to change the bodies and souls of men and make them virtuous by building on Aristotle's discussion of habituation as a form of perfection in *Physics* VII 3, which is the only extended natural scientific treatment of the processes of habituation in the corpus. Accordingly, I define character virtue as a proportionate, unified, and stable relation that exists between the capacities that are constitutive of the perceptive part of the soul and that have individually undergone qualitative changes so that each is in the best condition possible *and* that are suitably obedient to the rational part of the soul, which is practically wise. The perfection that brings about this kind of psychological relation is very hard to achieve because it involves the alteration of many psychological capacities, each of which requires its own particular kind of training from infancy onward.

Finally, chapter 6 tries to make sense of Aristotle's exclusion of women from full virtue and happiness by explaining—to the extent to which this is possible—their moral deficiencies in light of their presumed biological imperfections. I argue that, although *formally* identical to men (i.e., both men and women share the same human species form and hence possess the same human capacities), Aristotle believes that women, as a result of what happens to them under the influence of material necessity during embryogenesis, are imperfect members of the human species due to their colder *material* nature, which has repercussions for their ability—not to perform human functions as such, but to perform them *well* and therefore to acquire virtue and to perfect their human nature in a moral sense. I show how the particular natural character profile Aristotle attributes to women in the biological treatises, which can be explained in terms of their colder, earthier material nature, can account for his claims in the *Politics* that women can

acquire only the “virtues of assistants” and that they are naturally being ruled by men. I also discuss Aristotle’s notorious claim (often ascribed to plain sexism) that women by nature have a deliberate capacity necessary for moral decision making, but that it “lacks authority,” and his attribution of softness and weakness of will to them, and I offer psychophysical explanations for these moral deficiencies.

Together, these chapters document the extent to which Aristotle’s political science makes use of and builds on the results of natural science concerning human nature, and thereby show how Aristotle’s views about natural character as presented in the biological treatises can shed light on his understanding of the development of moral character in human beings in the ethical works. Aristotle claims that nature is one of the factors involved in producing morally good people; his biological discussions of natural character and of habituation as a form of perfection can help us understand how.

ABBREVIATIONS

Aristotle's and Others' Works

<i>Airs</i>	<i>De Aere Aquis et Locis (On Airs, Waters, and Places)</i> [Hippocrates]
<i>APo</i>	<i>Analytica Posteriora (Posterior Analytics)</i>
<i>APr</i>	<i>Analytica Priora (Prior Analytics)</i>
<i>Cael</i>	<i>De Caelo (On the Heavens)</i>
<i>Cat</i>	<i>Categoriae (Categories)</i>
<i>Charm</i>	<i>Charmides [Plato]</i>
<i>Cra</i>	<i>Cratylus [Plato]</i>
<i>DA</i>	<i>De Anima (On the Soul)</i>
<i>Div Somn</i>	<i>De Divinatione per Somnum (On Divination by Dreams)</i>
<i>Econ</i>	<i>Oeconomica (Economics)</i>
<i>EE</i>	<i>Ethica Eudemia (Eudemian Ethics)</i>
<i>EN</i>	<i>Ethica Nicomachea (Nicomachean Ethics)</i>
<i>Flor</i>	<i>Florilegium</i>
<i>Fr</i>	<i>Fragmenta (Fragments; Rose)</i>
<i>GA</i>	<i>De Generatione Animalium (Generation of Animals)</i>
<i>GC</i>	<i>De Generatione et Corruptione (On Generation and Destruction)</i>
<i>HA</i>	<i>Historia Animalium (History of Animals)</i>
<i>Hist</i>	<i>Histories [Herodotus]</i>
<i>IA</i>	<i>De Incessu Animalium (On Animal Progression)</i>
<i>In Ph</i>	<i>In Physica (In Physics) [Simplicius]</i>
<i>Insomn</i>	<i>De Insomniis (On Dreams)</i>
<i>Juv</i>	<i>De Juventute et Senectute (On Youth and Old Age)</i>
<i>Leg</i>	<i>De Legibus (Laws) [Cicero]</i>

Long	<i>De Longitudine et Brevitate Vitae (On Length and Shortness of Life)</i>
MA	<i>De Motu Animalium (On Animal Motion)</i>
Med	<i>Medea</i> [Euripides]
Mem	<i>De Memoria (On Memory)</i>
Meta	<i>Metaphysica (Metaphysics)</i>
Meteor	<i>Meteorologica (Meteorology)</i>
MM	<i>Magna Moralia</i>
Noct Att	<i>Noctes Atticus (Attic Nights)</i> [Aulus Gellius]
PA	<i>De Partibus Animalium (On the Parts of Animals)</i>
Ph	<i>Physica (Physics)</i>
Phgn	<i>Physiognomonica (Physiognomonics)</i>
Poet	<i>De Poetica (Poetics)</i>
Pol	<i>Politica (Politics)</i>
Pr	<i>Problemata (Problems)</i>
Protr	<i>Protrepticus</i> (I. Düring)
QAM	<i>Quod Animi Mores</i> [Galen]
Refut Haeres	<i>Refutatio Omnium Haeresium (Refutation of All Heresies)</i> [Hippolytus]
Rep	<i>De Re Publica (On the Republic)</i> [Cicero]
Resp	<i>De Respiratione (On Respiration)</i>
Rh	<i>Rhetorica (Rhetoric)</i>
SE	<i>De Sophisticis Elenchis (On Sophistical Refutations)</i>
Sens	<i>De Sensu et Sensibilibus (On Sense and Sensibilia)</i>
Somn	<i>De Somno et Vigilia (On Sleep and Waking)</i>
Tim	<i>Timaeus</i> [Plato]
Top	<i>Topica (Topics)</i>
Vit Pythag	<i>Vita Pythagorae (Life of Pythagorus)</i> [Porphyry]
Wehrli	<i>Die Schule des Aristoteles: Texte und Kommentare</i>

All the texts cited in this book are taken from the *Thesaurus Linguae Graecae Canon of Greek Authors and Works (TLG)*, 3d ed. (Oxford: Oxford University Press, 1990). All translations are mine.

PART I | The Physiology and Science
of Natural Character

CHAPTER 1 | The Physiology of Natural Character

1.1 Introduction

The purpose of Aristotle's political science, which encompasses both the projects presented in his two ethical treatises and that of his *Politics*, is a practical one: it aims "to make citizens good and capable of performing fine deeds."¹ And, as Aristotle explains, citizens become good and excellent through three factors, which are "nature, habit, reason" (*Pol* VII 13, 1332a38–40).² This chapter is concerned with the role the first of these three factors, nature, plays in the moral development of men, especially as Aristotle envisions this process within the confines of the ideal city. In particular, I will discuss the biological underpinnings of Aristotle's political suggestion—voiced in the context of his infamous "ethnography" in the *Politics*—that having certain natural character traits can make moral development easier or more difficult, and that what traits one has causally depends on the particular mixture of blood one has as a result of living in a particular climate (*Pol* VII 7, 1327b18–38).

Traditionally, the role of nature in moral development has not received much attention in the scholarly literature, and for good reasons. For Aristotle argues explicitly that men do not *actually* become good or virtuous in the strict, moral sense by nature, and they certainly do not in the way that men naturally grow tall or realize their perceptive capacities (see

¹ See *EN* I 9, 1099b29–32; see also *EN* I 13, 1102a7–12; *EN* II 2, 1103b26–31; and *Pol* VII 13, 1332a7–38.

² ἀλλὰ μὴν ἀγαθοὶ γε καὶ σπουδαῖοι γίνονται διὰ τριῶν. τὰ τρία δὲ ταῦτά ἐστι φύσις ἔθος λόγος. These three factors also appear in *EN* X 9, 1179b20–21; *Pol* VII 15, 1334b6–28; and *EE* I 1, 1214a14–25, although reason is replaced by "teaching" in *EN* X 9, 1179b21 (διδασχῆ), and by "learning" in *EE* I 1, 1214a19 (διὰ μαθήσεως).

especially *EN* II 1, 1103a17–b2, and *EN* II 6, 1106a9–10: “we have the capacities by nature, but we do not become good or bad by nature”). Instead, the production of virtuous dispositions involves the right kind of habituation from childhood onward and the development of practical reason through moral education, both of which require the intervention of the art of politics. In addition, at least in the context of the *Nicomachean Ethics*, Aristotle seems rather dismissive about the extent to which we can influence nature: nature determines whether we are born as free men (and not as nonhuman animals, women, or natural slaves) and therefore whether we have the prerequisite natural capacities for moral development, but “nature’s part is clearly not up to us (τὸ μὲν οὖν τῆς φύσεως δῆλον ὡς οὐκ ἐφ’ ἡμῖν ὑπάρχει), but as a result of some divine causes is present in those who are truly fortunate” (*EN* X 9, 1179b21–23). Thus, if nature plays a role at all in the moral development of men, it must be in the preliminary, pre-moral stages, and since being born as a free man appears to be a matter of moral luck, it is reasonable for students of Aristotle’s ethics to focus on the two remaining factors—habit and reason—which play a more crucial role in moral development and are more in human control.

However, as I shall argue in this chapter as well as throughout this book, Aristotle’s views about the role of nature in the moral development of men in his *Politics* are more nuanced and complex, as well as rather more dangerous and abhorrent from our perspective.³ There Aristotle argues that nature determines not only one’s gender and status, but also the quality of one’s body and soul, and that, as I mentioned above, some of these natural qualities—specifically, the “good”⁴ natural character traits of courage and intelligence—make the moral development of the men who have those traits *easier*.⁵ Because of this, Aristotle requires the lawgivers of ideal cities to help nature as much as possible by selecting as the future first citizens of these ideal cities men with the best natural character traits; in chapter 3 I will offer suggestions for how this selection procedure might work in practice. In addition, he urges them to

³ They include stereotypical and sexist prejudice and an extensive eugenic program. Just to be clear: my discussions of these views in the *Politics* in this book aim to elucidate the neglected role of nature as a factor in Aristotle’s ethical theory and *not* to support those views.

⁴ For natural character traits as being qualified as “good” or “best” (in a nonmoral, prehabituated sense), see, e.g., *PA* II 2, 648a9–11; *HA* I 10, 491b34–492a7; *HA* I 10, 492a10–12; and *HA* I 11, 492b30–31.

⁵ On the relation between natural character traits, natural virtue, and moral virtue, see chapter 5; cf. Lennox 1999b.

develop reproductive policies so as to ensure the birth of offspring with the kind of natural bodies and character traits that make moral development the most likely to succeed; I will return to Aristotle's eugenic views in chapter 4.

I will start in section 1.2 with a discussion of *Pol VII 7*, 1327b18–38. This ethnographical passage forms the main evidence for the idea that according to Aristotle, natural character makes a difference for moral development and that the particular natural character profile one has is causally related to one's mixture of blood and the material properties of the climate in which one lives. In section 1.3, I discuss the causal connection among blood, material nature, and the species-specific natural character profile animals have and specify its particular realization in human beings in section 1.4. The changeability of natural character and its relation climate and other factors such as aging, disease, and diet will be the subject of chapter 2.

1.2 *A Well-Mixed Natural Character and the Ease of Habituation*

Aristotle's ethnographical⁶ discussion of human character is part of his larger exposition of the material conditions of the ideal or perfect state in the *Politics*. In *Pol VII 4*, 1325b39–1326a5, Aristotle explains why it is important that both the number of citizens and the locality of the city be carefully selected by the lawgiver:

I am talking, for instance, about a quantity of citizens and land. Just as for other craftsmen—such as for the weaver and for the shipbuilder—it is necessary that there be material available that is fitting with regard to the task (for to the extent that this material turns out to be better prepared, necessarily also that which comes to be through craft is better), in the same way too is it necessary for the politician and the lawgiver that material be available that is suitable, being fittingly disposed (οὕτω καὶ τῷ πολιτικῷ καὶ τῷ νομοθέτῃ δεῖ τὴν οἰκείαν ὕλην ὑπάρχειν ἐπιτηδείως ἔχουσαν).

⁶ My focus in this section is on the way Aristotle distinguishes among the regional character profiles of biologically different “classes” (*genē*) or “nations” (*ethnoi*) of people (where the differences are those of the more and the less, and not of form: Aristotle does not distinguish humans into subspecies). I do not wish to burden him with a modern notion of race. On the complex relation between race and ethnicity in antiquity, see Hall 1997, Kamtekar 2002, Isaac 2004, and Lape 2010.

Since the lawgiver is in a sense a kind of craftsman,⁷ it is his task to determine “the number and the natural character of the citizens” as well as “what should be the size and character of the country” (*Pol VII 4*, 1326a5–8). Later in the chapter, Aristotle explains that the ideal city cannot comprise just any combination of inhabitants: its slaves, metics, and foreigners do not count toward its excellence, and the number and occupational diversity of the citizens—who are the proper parts of the city—need to be large enough to make the city self-sufficient, but small enough so that the citizens are able to know each other’s qualities (*Pol VII 4*, 1326b16: γνωρίζειν ἀλλήλους, ποῖοί τινές εἰσι). The ethnographical passage is part of the same argument and warns lawgivers not to choose their citizens lightly (*Pol VII 7*, 1327b18–38):

About the number of citizens, we have spoken earlier about what should be their limit; let us now speak about what should be their natural qualities. One could almost grasp this by looking at the cities that are held in high esteem among the Greeks and, with respect to the whole inhabited world, at how it is divided into nations. Those nations that live in cold regions and the ones around Europe are full of spirit but are lacking in intelligence and technical skill; and therefore they retain more freedom but are without political organization and are incapable of ruling over their neighbors. The nations around Asia have intelligent and technically skillful souls, but are spiritless, and therefore retain a state of subjection and slavery. The class of the Greeks, just as it is located in between them, so too it participates in both [characters]. For it is both endowed with spirit and intelligent, and therefore it retains both freedom and is the best politically organized and is capable of ruling everyone, if formed into one state. The same differentiation also belongs to the Greek nations among each other: for some have a one-sided nature, whereas others are well mixed with regard to both those capacities. And at this point it is clear that it is necessary for those who are likely to be the most easily led to virtue by the lawgiver to be intelligent and high-spirited in nature.⁸

⁷ See *Pol II 8*, 1268b34–38, and *Pol II 12*, 1273b30–33 and 1274b18–19: the lawgiver operates as the external efficient cause of the city by crafting laws and constitutions, which are the formal causes of the city (cf. *Pol I 2*, 1253a29–31; *Pol III 1*, 1274b38; and *Pol III 3*, 1276b1–13), and by imposing these laws and constitutions on a body of citizens, which is the city’s material cause. The final cause of the city produced by lawgivers is, of course, happiness.

⁸ περὶ δὲ τοῦ πολιτικοῦ πλήθους, τίνα μὲν ὄρον ὑπάρχειν χρή, πρότερον εἶπομεν, ποίους δὲ τινὰς τὴν φύσιν εἶναι δεῖ, νῦν λέγωμεν. σχεδὸν δὴ κατανοήσειεν ἂν τις τοῦτο γε, βλέψας ἐπὶ τε τὰς πόλεις τὰς εὐδοκίμουσας τῶν Ἑλλήνων καὶ πρὸς πᾶσαν τὴν οἰκουμένην, ὡς διείληπται τοῖς ἔθνεσιν. τὰ μὲν γὰρ ἐν τοῖς ψυχροῖς τόποις ἔθνη καὶ τὰ περὶ τὴν Εὐρώπην θυμοῦ μὲν ἔστι πλήρη, διανοίας δὲ ἐνδεέστερα καὶ τέχνης, διόπερ ἐλεύθερα μὲν διατελεῖ μᾶλλον, ἀπολίτευτα δὲ καὶ τῶν πλησίον ἄρχειν οὐ δυνάμενα· τὰ δὲ περὶ τὴν Ἀσίαν διανοητικὰ μὲν καὶ τεχνικὰ τὴν ψυχὴν, ἄθυμα δέ, διόπερ ἀρχόμενα καὶ δουλεύοντα διατελεῖ· τὸ δὲ τῶν Ἑλλήνων γένος, ὥσπερ μεσεῦει κατὰ

According to this passage, there are three main “character profiles” that belong to the peoples who inhabit the different regions of the then-known world,⁹ and each of these “profiles” gives rise to a particular kind of political organization. First, a combination of spirit with a lack of intelligence in a given people gives rise to freedom, but also to anarchy and an inability to rule others. Second, a combination of intelligence with a lack of spirit puts people in a permanent state of domination and slavery. And, finally, a combination of intelligence and spirit gives rise to freedom, excellent political organization, and the ability to rule others.

It is important to note here that these three character profiles represent the *natural* qualities or capacities individuals may have (see especially *Pol* VII 7, 1327b19–20: ποίους δέ τινας τὴν φύσιν εἶναι δεῖ, and b36: τὰς δυνάμεις) *before* they are led to virtue by the lawgivers through habituation and education. They constitute the properties of the raw materials the lawgiver has to select from in creating the ideal city. After all, the point of this passage is to show that not all peoples have the kinds of natural characteristics that can *easily* be woven into the kind of political organization that is most conducive to self-sufficiency and happiness: some are prone to forming independent kingdoms; others, to being permanently enslaved under the rule of tyrants; and only those who participate in both spiritedness and intelligence have by nature what it takes to be able to take part in the best form of governance.

Presumably, then, the lawgiver will be most successful in creating a self-sufficient and happy city if he selects his citizens from the people with a “well-mixed” natural character, and those can be found predominantly among *some* of the Greeks, who as a nation exhibit the same differences in character as can be found in the populations of the rest of the world.¹⁰ Aristotle reiterates the same point in a later chapter (in *Pol* VII 13, 1332a38–b1): people are made good or excellent by nature, habit, or reason, and in order to have those three factors harmonize with each other, a person must

τοὺς τόπους, οὕτως ἀμφοῖν μετέχει. καὶ γὰρ ἔνθυμον καὶ διανοητικὸν ἐστίν· διόπερ ἐλευθερόν τε διατελεῖ καὶ βέλτιστα πολιτευόμενον καὶ δυνάμενον ἄρχειν πάντων, μιᾶς τυγχάνον πολιτείας. τὴν αὐτὴν δ' ἔχει διαφορὰν καὶ τὰ τῶν Ἑλλήνων ἔθνη πρὸς ἄλληλα. τὰ μὲν γὰρ ἔχει τὴν φύσιν μονόκωλον, τὰ δὲ εὖ κέκραται πρὸς ἀμφοτέρας τὰς δυνάμεις ταύτας. φανερόν τοίνυν ὅτι δεῖ διανοητικούς τε εἶναι καὶ θυμοειδεῖς τὴν φύσιν τοὺς μέλλοντας εὐαγῶγους ἔσσεσθαι τῷ νομοθέτῃ πρὸς τὴν ἀρετὴν.

⁹ This tripartite picture of the world Aristotle presents here is rather crude; elsewhere he exhibits a much more subtle knowledge of geographical and climatic differences (see, e.g., *HA* VIII 28–29).

¹⁰ For instance, some Greeks will be braver than others: cf. *Top* VII 1, 152a13–14: “if the Peloponnesians and the Spartans are the bravest among Greeks . . .”

be born a human and not some other animal. He must also possess the appropriate kind of natural qualities both of body and soul, such that habit and reason can have a positive influence. But only *some* people will have the natural characteristics that will make them “easy to train” (*Pol* VII 13, 1332b9: εὐχειρώτους) by the lawgiver.

Although the immediate ethical implications of Aristotle’s ethnographical passage are thus relatively clear, there are at least three issues with regard to the nature and distribution of natural character traits that require further clarification.

First, Aristotle’s references to the *coldness* of the environment in his description of the first character profile and to the location of the Greek race *in between* Europe and Asia suggest that the differentiation in the natural character of humans is causally connected to differences in the temperatures of the environment in which these tribes of people live. In order to explain how environment causes local differences in the natural character of people, we will first need to understand the physiological basis of natural character (section 1.3) and also how natural character exactly is realized typically (i.e., in the ideal, undisturbed form) in human beings (section 1.4). Next, in chapter 2, I suggest how differences in external climates can account for the specific pattern of the differentiation of natural character Aristotle sketches in this passage, and compare the effects of climate to those of aging, disease, and diet on character.

The second issue that requires clarification pertains to what exactly the consequences of these natural differences among character traits for the moral development of the various peoples of the world are and thus to the scope of Aristotle’s elitism with regard to the opportunities different people have for becoming virtuous and happy citizens. For instance, does Aristotle believe that all barbarians are permanently excluded or disabled from developing virtue and therefore make up the group of humans he elsewhere refers to as “natural slaves,” or can they overcome their natural impediments? These ethical implications will also be discussed in chapter 2. In addition, if habituation turns out to be strong enough to help at least some men overcome their natural disadvantages, why does Aristotle believe that women—at least for the most part—cannot achieve full virtue at all? In chapter 6 I discuss Aristotle’s views about women and the presumed relation between their biological imperfections and their moral deficiencies.

A third issue that needs to be addressed is how Aristotle, or—in the context of the *Politics*—the lawgiver of the ideal city, will be able to identify those men with the best natural character traits. Given that even among the Greek nations, differences of the more and the less can be found among their

natural character traits, such that only some of them have a well-mixed natural character that is suitable for moral development, how does one go about selecting the first generation of citizens of an ideal city? Chapter 3 offers a speculative answer to this question: I suggest that Aristotle endorses some version of the science of physiognomy and that he thus believes that natural character traits can be inferred from facial features, hand gestures, gait, and possibly voice.

Together, these sections detail the evidence for Aristotle's neglected views of character as presented in the biological works and for how they feed into his moral theory.

1.3 *The Relation among Natural Character, Blood, and Material Nature*

Character as a differentia of animals

As I indicated in the introduction, Aristotle treats natural character in his biological works as one of the four differentiae that make animals the specific kinds of living beings they are, together with their ways of life, their activities, and their parts (see, e.g., *HA* I 1, 487a11–12). As is the case for the other three kinds of differentiae, Aristotle uses character traits for the causal explanation of other animal features¹¹ as well as for the organization of any collected data about animals within investigations.¹² Aristotle's basic conception of character as a differentia can be gleaned in particular from the *History of Animals* (especially *HA* I and VIII–IX are important in this context), which stresses the following four ideas.

First, Aristotle understands natural character in a broad sense. It includes what we commonly describe as character or personality traits, which according to Aristotle are connected to the animal's nonrational desires and belong

¹¹ The fact that natural character is a differentia does not mean that it is necessarily an essential characteristic of a whole animal kind; that is, that it is intrinsically or primarily connected to the form or the formal nature of that animal (as, for instance, "being a flyer" is for birds—having this capacity is part of the bird's substantial being). Because, as pointed out in Balme 1987 (p. 19), some of the differentiae used in the *History of Animals* are "variable accidents" or subspecific characteristics, which can be used in the explanation of local differences within animal kinds and are often primarily connected to the material nature of animals (Balme 1987 mentions the differences in the coloration and pitch of voice among birds, which are of the kind of affections Aristotle discusses in *Generation of Animals* V and which are explained almost entirely in terms of material-efficient causation).

¹² On the role of the four differentiae as tools "for the comparative organization of information about animals," see Lennox 2010a (pp. 241–248) and Lennox 2010b (pp. 335–342).

to the perceptive part of their soul. The most prominent of these, as they occur in the biological treatises, are timidity and courage, tameness and wildness.¹³ However, natural character for Aristotle also includes “intellectual traits” such as intelligence, craftiness, and stupidity, which in human animals are connected to their rational soul, but which in nonhuman animals must be grounded in their perceptive soul only (I return to this issue below).¹⁴ Aristotle attributes these and numerous other traits to a wide variety of animals in the *History of Animals* (see especially *HA* I 1, 488b12–24, and *HA* IX 3–49)¹⁵ and describes them as dispositions toward emotions or actions that play a role in the survival of the individual animal or its young.¹⁶ For instance, lions are said to be courageous, which is exhibited by their lack of suspicion and controlled behavior in chasing prey and fleeing from hunters (*HA* IX 29, 629b10–20; b35), and, similarly, the outstanding courage of the sheepdog is said to exhibit itself in its behavior while facing wild animals (*HA* IX 1, 608a30–31). Dolphins, on the other hand, are mild and gentle (πραότητος καὶ ἡμερότητος), which is shown by their protectiveness of their young, the wounded, and the dead (*HA* IX 48, 631a8–20). Sheep and octopuses are stupid or mindless (ἀνόητον), which can be seen in their unwillingness to move away from dangerous situations (*HA* IX 3, 610b22–23, and *HA* IX 37, 622a3–4), while the swallow and the brenthus are characterized as “skillful” (τεχνικός) as is exhibited by their nest-building qualities (*HA* IX 7, 612b21–27, and IX 11, 615a19). Regarding intellectual traits in animals, Aristotle also remarks in *HA* IX 7 that “in general concerning the ways of life of other animals, one can observe many resemblances to the human life” (*HA* IX

¹³ See especially *HA* IX 3, 610b20–22; *HA* IX 44, 629b5–8; and *PA* II 2–4. Other treatises tend to focus on the pair of courage and timidity and on intelligence: see, e.g., *Rh* II 12–14, and—perhaps—ps.-Aristotle, *Pr* XIV.

¹⁴ At the level of *virtues*, both natural and moral, Aristotle distinguishes between intellectual virtues and character virtues, since each group consists of virtues that belong to a different part of the soul, but at the level of *natural character*, intellectual traits are included in what Aristotle considers to fall under the “character of animals.” The reason for this is perhaps that when discussing natural character of animals in general—excluding the special case of humans—both “personality” and intellectual traits belong to the same part of the soul; namely, the perceptive one. Only in humans do the two come apart because humans have a rational soul in addition to the nutritive and the perceptive one.

¹⁵ Such as, just to name a few, “maternal fondness” (*HA* IX 4, 611a12: φιλόστοργον), bad character and mischievousness (*HA* IX 8, 613b23: κακόηθες . . . καὶ πανούργον), quarrelsomeness (*HA* IX 17, 616b20 and b22: ἦθος μάχμιος), fearlessness (*HA* IX 17, 616b29: ἦθος θρασύς), and laziness (*HA* IX 30, 618b5: ἦθος βλακικός).

¹⁶ The attribution of personality and intellectual traits to animals appears to have been common in the early Peripatos: see, e.g., White 2002 on Eudemos’s Tiergeschichte (frs. 126–132 Wehrli).

7, 612b18–19: πολλά μμήματα . . . τῆς ἀνθρωπίνης ζωῆς), and that especially in the smaller animals, one can observe a “rigor of intelligence” (*HA IX 7, 612b20–21: τὴν τῆς διανοίας ἀκριβειαν*). As an example of this, he mentions the nest-building skill of the swallow (*HA IX 7, 612b21–22: ἡ τῆς χελιδόνος σκηνοπηγία*), which resembles the housebuilding skill of humans, both with respect to the kinds of materials they use and to the way in which they make beds (*HA IX 7, 612b21–27*), and later also mentions other birds that exhibit various other forms of intelligence (*διάνοια*).¹⁷ Aristotle also describes animals such as hinds as practically intelligent because they give birth to their offspring away from the roads (*HA IX 5, 611a15–20; 611a15–16: οὐχ ἥκιστα δοκεῖ εἶναι φρόνιμον*). Similarly, he says about cranes that they exhibit “many clever things” (*HA IX 10, 614b18: φρόνιμα δὲ πολλὰ*), such as flying back to the ground and sitting still when they see clouds and bad weather up in the sky, enabling them to anticipate and seek shelter from bad weather (*HA IX 10, 614b19–21*).¹⁸

Second, and this is important, Aristotle explains that both types of character traits apply to humans and other animals alike, although not necessarily in the same way (*HA VIII 1, 588a17–b3*):

About the different [physical] nature of animals [i.e., differences in parts] and their mode of generation, things are this way [i.e., in the way described previously]; their actions and ways of life differ in accordance with their characters (*κατὰ τὰ ἦθη*) and foods. For even in the majority of the other animals there are traces of the modes concerning the soul (*ἴχνη τῶν περὶ τὴν ψυχὴν τρόπων*), which have differences that are most visible in the case of human beings. For in most of them there is gentleness and fierceness, mildness and cross temper, courage and timidity, fear and confidence, spiritedness and mischievousness, and resemblances of understanding concerned with thinking (*τῆς περὶ τὴν διάνοιαν συνέσεως . . . ὁμοιότητες*), just as we said with regard to parts. For some [of these traits] differ by the more and the less in relation to a human

¹⁷ For instance, the crane has a “smartness that is well-skilled with a view to life” (*HA IX 17, 616b20–21: τὴν δὲ διάνοιαν εὐμήχανος πρὸς τὸν βίον*) and so does the sitta (*HA IX 17, 616b22–23: τὴν δὲ διάνοιαν εὐθηκτος καὶ εὐθήμεων καὶ εὐβίωτος*), the aegolius owl (*HA IX 17, 616b27: τὴν δὲ διάνοιαν βιωτικὸς καὶ εὐμήχανος*), and the tree creeper (*HA IX 17, 616b30: τὴν δὲ διάνοιαν εὐβίωτος*; cf. also *HA IX 15, 616b11*, where the golden oriole is called *βιομήχανος*, “clever at making a living”).

¹⁸ Cf. *HA IX 40, 627b10–14*, where Aristotle states that bees, too, know in advance—*προγινώσκουσι*—the approach of bad weather. *HA IX 6* mentions many other quadrupeds who engage in practically clever (*φρονιμῶς*) behavior in order to protect themselves and their young, such as bears cleverly protecting their cubs; wild goats finding antidotes against arrows that are stuck in their body; and dogs, panthers, and tortoises eating herbs to cure themselves from diseases or poisonous foods.

being, and a human being [differs by the more and the less] in relation to the other animals (for some of those [traits] are more present in a human being; others, more in the other animals), others differ by analogy—for just as in a human being there is craft and wisdom and understanding (τέχνη καὶ σοφία καὶ σύνεσις), so there is in some animals some other such natural capacity (τις ἕτερα τοιαύτη φυσικὴ δύναμις). Such a thing is most visible with regard to youth of children: for in them [i.e., in children] it is possible to see something like traces and seeds of what are later to become states, and their soul differs so to say nothing from the soul of wild animals during that period, such that it is not unreasonable if there are some [traits] present in the other animals that are the same, others that are almost the same, and [still] others that are analogous.

As is clear from this passage, Aristotle believes that the traces of what we would call “personality traits” in animals are *similar* to those present in human beings, differing only in degree or “by the more and the less,” and presumably have very similar causal explanations in terms of their underlying psychology and physiology. However, the traces of *intellectual* character traits belong to nonhuman animals only by *analogy*—their difference with human intellectual traits is thus one in kind.

For Aristotle, only humans possess intellectual traits in a true, nonanalogous sense, since they alone of all the sublunary living beings possess the soul capacity for thinking. It is the rational part of the soul, supported by the perceptual part of the soul and in particular by imagination, that forms the foundation for human intellectual traits. Nonhuman animals do not possess reason, and therefore their intellectual traits are grounded exclusively in their perceptual capacities. They do not possess any “true” understanding or practical intelligence but possess these traits only by analogy and insofar as perception itself—with the help of imagination—can produce a wide range of (nonrational) cognitions that are indeed characterized as a “kind of thinking” by Aristotle.¹⁹ Thus, animals have no grasp of intelligible forms and possess practical intelligence only in the sense that they can anticipate future pleasures or pains and adapt their behavior accordingly “by perceiving things in advance.”²⁰ And although many animals are capable of learning

¹⁹ Cf. *GA* I 23, 731a33–34: animals “have perception, and perception is a *kind of knowing*” (γνώσις τις). On cognition in nonhuman animals as produced by their perception and imagination, see Lorenz 2006 (pp. 148–201).

²⁰ See *EN* III 10, 1182a20–24; *EN* VI 7, 1141a26–28; *PA* III 6, 669a19–20; and *Sens* 1, 436b19–437a1, where Aristotle states that animals are capable of smelling, hearing, and seeing for the sake of preservation, “such that, by perceiving things in advance—προαισθανόμενα—they

and memory, which are capacities of the perceptive part of the soul,²¹ human beings are the *only* animals that are capable of deliberation and of actively recalling memories (*HA* I 1, 488b24–26), which are capacities connected to the capacity of thinking that, in the sublunary world, is unique to humans.²² Aristotle makes this connection between animal intelligence and their perceptive qualities explicit in some of his characterizations of animals, such as in the case of the elephant in *HA* IX 46, 630b19–21:

For it can learn and understand (παιδεύεται καὶ ξυνήσιν) many things, as it can even be taught to kneel for a king. And it is very perceptive (εὐαίσθητον) and excels in understanding over other animals (τῆ συνέσει τῆ ἄλλῃ ὑπερβάλλον).

This kind of intelligence that involves understanding (which is thus not just a learned behavioral response to a certain sign)²³ and that is explicitly linked to an animal's perceptive capacity is the closest we get to an analogy to human intelligence in animals.

Third, Aristotle claims that humans are the only species in which the traces and seeds of traits that are present by nature²⁴ and have the metaphysical status of “natural capacities”²⁵ are able to develop into stable dispositions (ἔξεις).²⁶ The reason for this appears to be that humans have “the most perfected nature” (τὴν φύσιν ἀποτετελεσμένην). This, I take it, is the implication of what Aristotle says in *HA* IX 1, 608b4–8: “traces of these character traits are present, so to speak, in all, but they are more visibly present in those that have more character and most of all in humankind: for it has the most

pursue their food and escape the things that are bad or destructive.” On problems involved with Aristotle's attribution of practical intelligence to animals, see Labarrière 1990 and Lennox 1999b.

²¹ *Mem* 1, 450a22–23 and 451a16–17; *Mem* 2, 453a4–14. Cf. *Meta* A 1, 980b21–27.

²² See also *HA* IX 1, 608a17–21; *Mem* 1, 450a11–12; *Mem* 1, 451a14–17; *Mem* 2, 453a8–14; and *APo* II 19, 99b34–100a4. Of course, the capacities for deliberation and recollection are necessary for the transformation of “natural character” to moral virtues, which means that the category of moral character is also one that belongs uniquely to human beings; cf. *EN* VI 2, 1139a19–20, where Aristotle indicates that action in a moral sense involves intellect, and not just perception that is present also in animals, which is why animals “do not share in action.”

²³ This is, for instance, the case in sheep: see *HA* IX 3, 610b33–34.

²⁴ Cf. the use of “by nature” in *HA* IX 4, 611a12, and *HA* IX 34, 619b28.

²⁵ See *HA* VIII, 588a30–31: φυσική δύναμις, and *HA* IX 1, 608a13–14: τινὰ δύναμιν περὶ ἕκαστον τῶν τῆς ψυχῆς παθημάτων φυσικήν.

²⁶ Contrast, however, *EN* VI 13, 1144b1–16, where Aristotle attributes character dispositions to wild animals as well.

perfected nature, such that also those dispositions are more visibly present in them.”²⁷ Both human and nonhuman animals thus possess natural character traits as natural capacities from birth, but only humans are capable of developing these capacities into stable dispositions, which is of course of crucial importance for Aristotle’s moral theory.

And fourth, Aristotle holds that in animals that are sexually differentiated, there also exists a differentiation in the character traits of the two sexes (*HA* IX 1, 608a21–b4 and 608a21–23):

In as many kinds as there is a female and a male, nature has almost in the same way set apart the character of the female in comparison to that of the male (σχεδὸν ἢ φύσις ὁμοίως διέστησε τὸ ἦθος τῶν θηλειῶν πρὸς τὸ τῶν ἀρρένων).

Overall—if any generalizations are possible here—Aristotle seems to suggest that females are softer in character and easier to train but are also more impulsive and deceitful, whereas males are more courageous, more helpful, and less deceitful. The sexual differentiation is clearly not *just* a matter of differences of the more and the less, in which the female simply has a less pronounced or less fully developed character trait than the male has. According to Aristotle, either sex can take up a position on either end of the spectrum that stretches out between deficiency and excess. In addition, some of the character differences appear to be differences in kind.²⁸ Again, Aristotle claims that this differentiation is *most visible* in human beings and other “more perfect” animals.

For our current purposes, Aristotle’s second and third claims here are the most important, both methodologically and in terms of content. Because, given Aristotle’s belief in the (hierarchical) continuity between animals and humans—which pertains also to their character traits (see the *scala naturae* in *HA* VIII 1, 588b4–12)—we can extrapolate from his remarks about animal character to make sense of his ethnographical views of humans. In particular, we can use Aristotle’s discussion of the causal relation between blood and character in *Parts of Animals* to understand why animals have the species-specific character profile they have. I will turn to this relation

²⁷ Note that Aristotle’s natural, “positivist” developmental account, according to which more-perfect beings have more-developed character traits, is in a sense the reverse of the moral, degenerative account Plato provides in the *Timaeus*, according to which morally defective men are reborn as women or as animals with the corresponding defective character traits, thus giving rise to less and less developed and more defective character profiles (see *Tim* 42b–d and 90e–92c; cf. *Phaedo* 81e–82c, *Rep* 620a–d, and perhaps *Phaedrus* 249b).

²⁸ I will return to this gendered discussion of natural character traits in chapter 6.

between blood and character immediately below. In addition, by explaining the level of development and visibility of human character in terms of their nature being “most perfected,” Aristotle points us to the *material* cause of character, because the nature that is perfected turns out to be the *material* nature. The evidence for this, which I draw from Aristotle’s *Generation of Animals*, will be discussed next.

The material-causal relation between blood and natural character

Aristotle’s most extensive discussion of why animals have the species-specific natural character traits they have occurs in the context of his discussion of the uniform parts in *Parts of Animals* and in particular in his discussion of the causal roles of blood.

Blood is one of the uniform parts, which means that every part of the compound is the same as or synonymous with the whole (*GC I 1*, 324a20), and that its chemical composition is a combination (and not merely a mixture) of elements or element potentials in accordance with a certain stable *logos*.²⁹ This *logos* is presumably a kind of quantitative ratio—a kind of recipe, so to speak—for the organization of elements into organic material substances.³⁰ The specific chemical composition of blood is a combination of water and earth (*Meteor IV 7*, 384a16–17), with either water or earth dominating the compound. When earth dominates, the blood is fibrous: it solidifies by cooling and melts by moisture. When water dominates, the blood is watery and does not solidify (*Meteor IV 10*, 389a19–23). In its natural state, blood is hot, soft, and moist, and when healthy—or well concocted—it is “sweet to the taste,” “red in color,” and “neither very thick nor very thin.”³¹

In *PA II 2*, 647b20–29, Aristotle specifies three ways in which moist and dry uniform parts can serve as a material cause of the animal to which they belong: as constitutive matter (ὕλη) of nonuniform parts, as nourishment (τροφή) for the nonuniform parts, or as residues (περιττώματα). Blood is the final nutriment of the body of the blooded animals and, in that capacity,

²⁹ I borrow this characterization of the material nature of uniform parts from Freudenthal 1995 (pp. 11–12).

³⁰ See, e.g., *DA I 4*, 408a13–18, and *PA I 1*, 642a22 (λόγον τῆς μίξεως). Lennox 2001b (p. 150).

³¹ On the properties of blood, see *Meteor IV 11*, 389b6–10; *PA II 2*, 647b10–15, and *II 3*, 649b20–27; and *HA III 19*, 520b18–23; cf. *PA IV 2*, 677a19–29.

performs the second material-causal role mentioned here,³² although, of course, it is also the immediate constitutive matter of the other uniform parts.³³ Aristotle continues by summing up the material differences among the various kinds of blood—one kind is thinner, and another is thicker; one is purer, and another is more turbid; one is colder, and another is hotter—and claims that these differences of the more and the less can be found both in the parts of one animal (cf. *PA II 2*, 648a11–13) as well as between one animal and another (*PA II 2*, 647b31–35). Immediately following this, Aristotle explains that because of these differences in the *material* qualities of the blend constitutive of their blood, different animals have different character traits (*PA II 2*, 647b35–648a11):

Thicker and hotter blood is more productive of strength (ισχύος μὲν ποιητικώτερον), while thinner and cooler blood is more perceptive and intellectual (ισχύος μὲν ποιητικώτερον). And the same difference also belongs to the attributes that are analogous to blood. And because of this (διό), both bees and other such animals [that have the analogue of blood] are smarter in their nature (φρονιμώτερα τὴν φύσιν) than many blooded animals, and why among blooded animals those with cold and thin blood are smarter (φρονιμώτερα) than their opposites. The best are those with hot and thin and pure blood: for such animals are at once in a good condition with regard to both courage and intelligence (ἅμα γὰρ πρὸς τε ἀνδρείαν τὰ τοιαῦτα καὶ πρὸς φρόνησιν ἔχει καλῶς).

In short, Aristotle here suggests that relative hotness of blood produces courage and that thinness or moistness of blood produces intelligence;³⁴ their opposites, then, likely cause the opposite effects, with coldness producing timidity, and thickness or earthiness of blood producing stupidity. This is exactly the causal schema we find in *PA II 4* (passim), where Aristotle continues his discussion of the material differentiations of blood and their relation to differences in species-specific character profiles of animals.

There Aristotle explains that thick or earthy blood is more fibrous and therefore more prone to boiling, especially in animals that are already hot

³² *PA II 3*, 650b2–3 and b12–13: “blood is for the sake of nourishment, namely of nourishment of the parts.” See also *PA II 6*, 652a6–7; *PA III 5*, 668a5–13; and *GA IV 8*, 777a5–6. Cf. Freeland 1987 (pp. 398–404).

³³ The analogue of blood performs the same causal role in the bloodless animals: *PA II 3*, 650a34–35. Aristotle is rather vague, however, on the nature of the fluids that are supposedly analogous to blood: see Lloyd 1996b (pp. 154–155).

³⁴ The idea that the blend of blood is causally responsible for intelligence and other traits goes back at least to Empedocles; see, e.g., DK31A86.11; cf. Solmsen 1950 (pp. 437–40).

by nature, and this causes spiritedness in character. Blood that is hot and thick has these potentials by virtue of having fibers in it, which are earthen (*PA* II 4, 650b18: αἷ δ' ἴνες γῆς εἰσιν). This means not only that this kind of blood can solidify (when the watery part of the blood evaporates under the influence of cold, the fibers dry and form a solid layer: see *PA* II 4, 650b17–18 and 651a4–12), but also that it is more prone to boiling. Spirit produces (extra) heat within the body (*PA* II 4, 650b35: θερμότητος γὰρ ποιητικὸν ὁ θυμός), and the more earthy particles that are present in the blood, the more heat can be given off to the point where the fibers “become like sparks in the blood, and produce a boiling in the spirit” (*PA* II 4, 651a1–2; cf. Aristotle’s definition of anger in *DA* I 1, 403a30–b1 as “a boiling of blood and heat around the heart”). Emotions involving *thumos* thus ignite animals with already hot, fibrous blood even more and push them toward exhibiting spirited behavior.

Thin blood, on the other hand, is watery and therefore more prone to chilling, especially in animals that are already cold by nature, and this causes timidity or cowardice in character. Fear cools (*PA* II 4, 650b27–28), and cold solidifies watery things (by freezing them, rather than by drying them), which causes animals with blood that is too watery to be more timid, since they “are prepared in advance for this affection [i.e., for fear]” (*PA* II 4, 650b27–31). This predisposition subsequently causes animals to exhibit particular kinds of behavior when they get scared (*PA* II 4, 650b31–33). These animals become immobile, such as dung beetles (*PA* IV 6, 682b25–27); change their colors, such as the octopus (*PA* IV 5, 679a12–13) and the chameleon (*PA* IV 11, 692a21–25); or discharge residues, such as cuttlefish, squids, and octopuses (*PA* IV 5, 678b35–679a30). Aristotle’s discussion of these latter residue-discharging animals in *PA* IV 5 makes explicit the causal relation among feeling, character, and behavior: what triggers the discharge of residues is the feeling of fear (*PA* IV 5, 679a5–6: Ὅταν γὰρ φοβηθῶσι καὶ δεισῶσιν; 679a14: διὰ δειλίαν; and 679a28: διὰ δειλίαν), but they are prone to feeling fear because of their character, which is to be scared easily, and this character trait is explained by reference to their bloodlessness: “they are bloodless and because of this are cool and prone to be scared” (*PA* IV 5, 679a24–25: Ἀναίμων δ' ὄντων καὶ διὰ τοῦτο κατεψυγμένων καὶ φοβητικῶν). Aristotle then goes on to explain that this discharge “happens of necessity because of the cowardliness” (συμβαίνει μὲν ἔξ ἀνάγκης ἀφιέναι διὰ δειλίαν): the feeling of fear triggers a physiological process of cooling, which leads to the release of residues, which is then made use of by nature for the protection and preservation of these kinds of animals (*PA* IV 5, 679a27–30). The causal relation between coldness and cowardice is also expressed in

Aristotle's description of the cuckoo, which is said to be extremely cowardly as a consequence of its cold (material) nature.³⁵

Returning to Aristotle's discussion of more-watery blood in *PA* II 4, he also states that this kind of blood gives rise to a more subtle intelligence (*PA* II 4, 650b19: γλαφυρωτέραν . . . τὴν διάνοιαν) and to a better-moved capacity of perception (*PA* II 4, 650b22–24: εὐκίνητοτέραν . . . τὴν αἴσθησιν). The reason for this is that more-watery blood contains less earth and is therefore purer, and purer blood makes for calmer and softer³⁶ organs of perception, which increases the accuracy in the reception and retention of the motions caused by the objects of perception in the sense organs, which in turn increases the animal's perceptual intelligence. That is, in order for the five sense capacities to work optimally, their source and the blood in their organs have to be as calm as possible (*PA* III 4, 667a4; cf. *PA* III 10, 672b14–673a1); that is, there should be as little motion in them as possible so as not to interfere with the motions involved in perceptive activity (*PA* II 10, 656b3–6). Purer blood is of material necessity calmer than blood that is more turbid (cf. *PA* III 4, 667a4–6) and therefore provides a blend more suitable for perception.³⁷ This is because, as Aristotle explains, “just as on a clean garment (ἐν ἱματίῳ καθαρῷ) even small stains are visible, so also in a pure sight (ἐν τῇ καθαρᾷ ὄψει) even small movements are plain and cause sensations” (*GA* V 1, 780b31–33).³⁸ Note that purity of blood does not enhance vision from a distance or increase in hearing; Aristotle claims here only that the purity of blood increases the *accuracy* of perception and on account of that makes the animal more intelligent. For a schematic overview of these natural character traits and the types of blood that produces them, see table 1.1 below.

One might object that although Aristotle explicitly uses “productive” language characteristic of material-efficient causation when describing the relation between blood type and character profile in these chapters and other language that describes causal relations between two states of affairs (such

³⁵ *GA* III 1, 750a12.

³⁶ Softness of flesh allows objects of perception to leave an “impression” (ὁ τύπος) in the blood and fluids of the sense organs (*Mem* 1, 450a25–b11) and thereby increases the accuracy of *tactile* perception.

³⁷ See *PA* IV 10, 686a8–11: “Nature placed on its outside (i.e., of the head) also some of the perceptive parts, on account of the blend of the blood being well proportioned (διὰ τὸ σύμμετρον εἶναι τὴν τοῦ αἵματος κρᾶσιν) and suitable both for the warmth of the brain and for the calmness and accuracy of perception (πρὸς τὴν τῶν αἰσθήσεων ἡσυχίαν καὶ ἀκριβείαν).”

³⁸ Cf. *GA* V 2, 781b1–6; *GA* V 1, 780b16–17; and *GA* V 2, 781a15–17.

TABLE 1.1 Aristotle's Classification of Blood Types and the Natural Character Traits They Produce (on the Basis of *PA* II 2 & 4)

TYPE OF BLOOD	MATERIAL PROPERTIES	CHARACTER TRAITS	EXAMPLES
Hot and thick blood (= dry and earthy, hence fibrous)	Prone to boiling; Produces hardness in flesh, which is then less sensitive to motions	Strength, spirit, stupidity	Bulls, boars
Cold and thin blood (= moist and pure, hence watery)	Prone to chilling; Produces softness and calmness in flesh, which is then more sensitive to motions	Cowardice, intelligence	Deer, bees
Hot and thin blood (= moist and pure)	"Best"; Prone to boiling; Produces softness and calmness in flesh, which is then more sensitive to motions	Courage, intelligence	Humans

as the use of *dia*), we should not interpret this language causally.³⁹ On this alternative reading, Aristotle is not presenting us with the material-efficient causes of natural character but instead simply notes a correlation between blood and character. The cause for why animals have the natural character profile they have, which Aristotle does not mention in these contexts but is assumed to be known, is their form, which specifies the character they are supposed to have and which then conditionally necessitates a particular kind of material nature. Or, alternatively, one might suggest that the explanations Aristotle offers in these chapters *are* causal explanations, but that they are incomplete: they specify only the materially necessary conditions for specific character profiles, while the complete explanation would also specify the form that includes this character and the "that for the sake of which" animals have this character.

In response to these suggestions, it is important to note that in the explanations we quoted above for why particular animals have the species-specific natural character traits they have, Aristotle consistently associates those traits with components of the material natures of those animals. He also explicitly

³⁹ The two alternative readings discussed here were made by an anonymous reviewer of this manuscript.

picks out blood as the material cause of natural character in the following text (*PA* II 4, 651a12–17):

It is reasonable that of many features the cause is the nature of the blood, both with respect to character among animals and with respect to perception: for it is the matter of the entire body. For nourishment is matter and blood is the last stage of nourishment. It therefore makes a great difference whether it is hot or cold, thin or thick, turbid or pure.⁴⁰

Blood is the primary constituent of the material nature of animals because it is the final nutriment of the body, and *therefore* it is the material cause of character and its differences. Furthermore, in Aristotle's view of the natural world, "correlation does imply causation." If certain character traits always go together with certain material natures, they *must* be causally connected according to Aristotle (either by teleology or by material necessity) and cannot be the product of chance alone. So the first suggestion must surely be wrong. As for the second suggestion, there is simply no evidence in the corpus to suggest that Aristotle thinks that animals have the particular character profiles they have for the sake of something or that the particular character profile is part of the definition of the substantial being of animals. There are no formal final explanations offered for natural character traits,⁴¹ despite the fact that the *Parts of Animals* is full of explanations that state both the material-efficient cause (often picked out simply by the phrase "by necessity") and the final cause for why animals have the parts they have, and so one would expect Aristotle to state both types of explanation when both are available. The most natural reading of Aristotle's discussions of natural character in the biological treatises suggests that the quality of blood an animal has determines by material necessity the kind of species-specific character profile it has (or, more simply, blood is the material cause of natural character) and that that is the complete explanation of that animal's character.

⁴⁰ Πολλῶν δ' ἐστὶν αἰτία ἡ τοῦ αἵματος φύσις καὶ κατὰ τὸ ἦθος τοῖς ζῴοις καὶ κατὰ τὴν αἴσθησιν, εὐλόγως· ὅλη γὰρ ἐστὶ παντὸς τοῦ σώματος· ἡ γὰρ τροφή ὅλη, τὸ δ' αἷμα ἡ ἐσχάτη τροφή. Πολλὴν οὖν ποιεῖ διαφορὰν θερμὸν ὄν καὶ ψυχρὸν καὶ λεπτὸν καὶ παχὺ καὶ θολερὸν καὶ καθαρὸν.

⁴¹ The reference to the "character of the soul" of chameleons is no exception, since it is not the inclusion of the animal's natural character profile that is at stake here but rather the fact that it has the least blood of all (*PA* IV 11, 692a22–23: ὀλιγαίμοτατος γὰρ ἐστὶν. Αἴτιον δὲ τὸ τῆς ψυχῆς ἦθος ἐστὶν αὐτοῦ): chameleons have the least blood of all on account of the character of their soul, which presumably means that the definition of their substantial being specifies not only the fact that they are bloodless rather than blooded but also that they are "little blooded." This in turn explains why they scare easily: the smaller the amount of blood there is, the quicker it cools, and fear is a cooling of the blood.

Now, there is a further question about whether the material blend that is constitutive of the blood and the material nature of animals has itself a further explanation or not. For instance, it is possible that the particular recipe of the material blend is included in the definition of the substantial being of an animal, in the same way perhaps that being blooded or being bloodless as such is said to be part of their definition (see, e.g., *PA* IV 5, 678a31–35).⁴² But it is also possible that the material nature of animals is simply “causally basic”; that is, something that does not have a further explanation but that is treated as a given by Aristotle. Aristotle’s explanatory practice speaks in favor of this second option,⁴³ while at least some readings of his *Metaphysics* Zeta speak in favor of matter somehow being included in the definition of the substantial being of natural entities,⁴⁴ but for our purposes there is no need to settle this difficult and controversial matter. What matters here is the more modest claim that natural character is explained in terms of the material potentials that belong to the animal’s blood, and that this is the only explanation Aristotle provides for this feature of animals.

Humans as having the most perfected material nature

The causal link between the type of blood an animal has and its species-specific character profile surfaces only indirectly in Aristotle’s characterization of humans as having the most perfected nature in his treatment of natural character in the *History of Animals*. There he implies that because humans have “the most perfected nature,” natural character traits are the most visible in them and are capable of changing into stable dispositions (*HA* IX 1, 608b4–8). As Aristotle’s explanation of the different modes of

⁴² Gotthelf 1985b (pp. 43–50). Gelber 2015 (pp. 49–53) contends that it is the function of nourishment that explains teleologically why animals have the particular bodily blend they have. On Gelber’s reading, the blood of a particular kind of animal has the characteristics it has because those are the properties that are conditionally necessitated for the sake of nourishing its species-specific bodily parts. Note, however, that for Aristotle the question of what kind of nourishment a kind of animal needs is itself determined by its particular kind of bodily blend or material nature, which includes its blood (see, e.g., *HA* VIII 1, 589a2–9; I will say more about the relation between blood and nourishment in chapter 2.2 of this book). That is, the parts of animals are produced from blood with a particular material profile and therefore need to be nourished by blood with that very same material blend. So even though one of the functions of blood is nourishment and this explains why blood and the bodily parts it nourishes must share the same material nature, this function does not in itself explain why animals have *the particular kind of bodily blend* or *level of heat* that they do, or why indeed animals are blooded or bloodless in the first place.

⁴³ See also Charles 2000 (pp. 334–339) and Lennox 2001a (pp. 183, 195–196).

⁴⁴ See, e.g., Peramatzis 2011, *passim*.

reproduction in *Generation of Animals* II 1 and II 4 makes clear, this expression of “the most perfected nature” must refer to the *material* nature of humans, and it is “the most perfected” because it stands on top of the natural hierarchy that can be discovered among the different material natures that belong to different kinds of animals (GA II 1, 733a32–33; GA II 4, 737b25–27). I will discuss this explanation in some detail, since Aristotle’s explanation of the different modes of reproduction forms an illuminating parallel for his explanation of the different kinds of natural character found among animals. Being a reproducer and having a natural character profile are features that are specified by the definition of the substantial being of the animals in question and are therefore features that belong to their soul, but what *specific* kind of reproducer the animal is and what specific kind of character profile the animal has are causally determined by the animal’s material nature—that is, by its particular blend of blood and its level of internal heat.

In the first chapter of his second book of the *Generation of Animals*, Aristotle notes that there appear to be differences between the generative processes of different kinds of animals (GA II 1, 732a25–732b14). This becomes clear when one looks at the natural variation among the resulting offspring that are produced by different kinds of animals, because different kinds of animals produce offspring that have reached different degrees of perfection at the moment of birth. There are animals that are live bearing and give birth to offspring that are perfected to the point that they resembles their parents, but there are also animals that produce something undeveloped, such as egg layers and grub producers. And even within these categories there are differences: some live-bearing animals produce live young, some lay eggs internally and are only later live bearing externally, and some animals produce perfect eggs, but some produce imperfect ones. Finally, there are also animals who are generated spontaneously. Before Aristotle can delve into an account of embryogenesis, he first needs to provide an explanation of these differences among the modes of reproduction and then decide which embryogenetic process he is going to describe first.

Discovering the cause of this differentiation turns out to be difficult, however, and Aristotle tells us the many divisions he used in an attempt to find it. “These kinds admit of much cross division (πολλή ἐπάλλαξις),” he says, but none of the divisions Aristotle mentions yield the relevant difference, and thereby the cause: having two versus having four feet, having feet versus not having feet, and neither any of the parts for locomotion themselves turn out to be “the cause of this difference” (αἴτιον τῆς διαφορᾶς ταύτης). In fact, it appears that the relevant cause that is responsible for this

differentiation—perhaps counter to what one might have expected—is not a formal one or a feature that would be included in the definition of the substantial being of the animal. Instead, Aristotle refers to the different levels of perfection of different kinds of animals as being responsible for the differences between the modes of reproduction, and then he subsequently cashes out this language of perfection in terms of the variations in their levels of vital heat and in their material natures. The more perfect the animal, he claims, the more perfect its product of generation is (see especially *GA* II 1, 733a1–3); that is, the more physically complete the offspring will be by the time it is cast out of the mother, both in terms of sexual differentiation and in terms of the formation of all its necessary parts. And more perfect (τελεώτερα) according to Aristotle entails hotter, less earthy and therefore purer, and moister and therefore less dry in their material nature (*GA* II 1, 732b31–32: “but the more perfect are those that are hotter in their nature and have more moisture and are not earthy”). So, while the capacity to reproduce itself must surely be a formal property of every living being (each living being must by definition possess a nutritive soul), it appears that Aristotle picks out the differences in the *material natures* of different kinds of animals as the cause for the differences in the *perfection* of their modes of reproduction and hence for the particular kind of reproducer they are. Thus, whether an animal species is an “egg-laying reproducer” rather than a “live-bearing reproducer” is a materially necessitated consequence of its bodily blend and the level of its internal heat.⁴⁵ Birds, for example, are “sexual reproducers” by virtue of their *formal* nature, but they are “egg layers” in virtue of their *material* nature. Their dryness prevents them from being live bearers and causes them to produce eggs, while their level of internal heat allows them to produce perfect eggs rather than imperfect ones (*GA* II 1, 733a6–24), and both are characteristic features of birds.⁴⁶

⁴⁵ Cf. Charles 2000 (pp. 333–334 and especially p. 338) on what the author calls the “conservative approach” toward the description of the essence of biological kinds: “In the account just sketched, a certain degree of heat may be necessary for the fishes’ survival, but will not be part of their essence. The presence of a material base of this (general) type might be explained teleologically by the requirements of the form. (‘This is a way, but not necessarily the only way, for the fish to survive.’) . . . Thus, one might explain the specific mode of reproduction in a given type of fish in terms of its precise degree of heat. . . . In this account, it would be part of this fish’s form that it reproduces *in some way*, but not that it reproduces *in the precise way it does*. For, the explanation of the latter would rest on (e.g.) a material explanation, whose starting point was not itself part of the form. In such an account, the form would not specify the precise way it reproduces, but only mention that it reproduces in some way.”

⁴⁶ Note, however, that the specific way in which subspecies of birds lay eggs—e.g., ducks laying eggs of a certain size on the ground near water during a certain part of the season—is *not* a matter of just bottom-up, material causation but involves some kind of teleological

TABLE 1.2 Aristotle’s Scale of Perfection Based on Differences in Material Natures (on the Basis of GA II 1 & 4)

	ANIMAL SPECIES	TYPE OF MATERIAL NATURE
	<i>Live bearing (blooded)</i>	<i>Optimal: hot, moist, and pure</i>
1a	Internal: humans, mammals, dolphins	hottest, moistest, almost no earth / purest
1b	Internal eggs: selachians	hot, moist, little earth / less pure
	<i>Egg laying (blooded)</i>	<i>Lacks moisture</i>
2a	Perfect eggs: birds, snakes, reptiles	cold, dry, earthy
2b	Imperfect eggs: fish, crustaceans, cephalopods	colder, drier, earthier
	<i>Grub producing (bloodless)</i>	<i>Lacks moisture and heat</i>
3	Insects	Coldest, driest, uses external earth

In the context of discussing these differences in modes of reproduction, Aristotle distinguishes among three types of material nature (for a summary overview, see table 1.2 above): first, there are blooded animals that are moist and have little or no earth in their constitution; second, blooded animals that are dry and earthy; and third, bloodless animals that are dry and have no earth. Within the first two types, differences in the internal heat of animals cause further differentiations in their modes of reproduction: all moist animals are live bearing (GA II 1, 733a11: “for moisture is ζωτικὸν—life giving”), but the hotter animals among them, such as mammals, are internally live bearing, whereas the colder ones, such as selachians, first produce internal eggs and are only externally live bearing afterward. All dry animals produce eggs, but the hotter animals among them, such as birds, snakes, and scaly reptiles, lay perfect (i.e., hard-shelled, fixed-sized) eggs, whereas the colder animals, such as fish, crustaceans, and cephalopods, lay imperfect eggs. The third bloodless group, consisting predominantly of insects, divides further into those that are produced by sexual reproduction and those that generate

coordination through the actions of the animal’s formal nature or soul: the formal natures of ducks realize the function of egg laying with a view to the other features and activities that are characteristic of ducks, such that the animal as a whole is a unified, functional being. See Henry 2011 (pp. 210–211) on the egg-layer example and on how it is the possession of a certain kind of material nature that unifies egg layers as a natural kind in Aristotle’s natural science. For material features being part of the nature of a species without being a formal property of them, see cf. GA V 6, 785b16–786a2, and especially 785b30–31: “for it belongs to the whole species not to have one color in their nature” (διὰ τὸ ὅλῳ τῷ γένει ὑπάρχειν ἐν τῇ φύσει τὸ μὴ μίαν ἔχειν χροῶν).

spontaneously, but Aristotle does not explain the causes of this differentiation here (on this, see *GA* III 9–11).

What is interesting for our purposes is that Aristotle points out that these “subgroupings” of animals, which are differentiated based on their species-specific material natures, give rise to a *scala naturae* (*GA* II 1, 733a32–33): nature has produced a natural hierarchy among these animals, according to which the ones that are hottest, moistest, and not earthy—as we said earlier—are *the most perfect*,⁴⁷ and the ones that are cold and dry are the least perfect.⁴⁸ In a later chapter, he summarizes this account (*GA* II 4, 737b8–25) and then identifies human beings as being at the top of this scale of perfection (*GA* II 4, 737b25–27): “Now we must start first from the first [animals]: the first are the perfect animals (τὰ τέλεια ζῶα), and these are the live-bearing animals and first among them humankind (καὶ τοῦτων ἄνθρωπος πρῶτον).”

Humans exhibit the most perfect mode of reproduction *because* they have the best material nature, which means that they are the hottest, moistest, and least earthy animals in the sublunary world.⁴⁹ Aristotle uses the term “perfection” here in reference to material natures in the context of modes of reproduction, but it applies in the same way to the kind of character traits humans have in virtue of that very same material nature: we saw in the previous section that Aristotle qualifies blood that is hot, moist, and pure as “the best” because it produces both natural courage and intelligence (in *PA* II 2, 647b35–648a11). Presumably, then, this is the natural character profile that belongs to human beings as a species (and indeed in other biological treatises Aristotle characterizes human blood as the hottest and purest of all).⁵⁰ And analogously to the case of reproduction, human beings possess *a* character profile because that is part of their soul or formal—just like most other animals, humans need to have a certain way of responding to their

⁴⁷ Aristotle characterizes these animals as “participating in the purer principle” in *GA* II 1, 732b29. Cf. also *Resp* 13, 477a15–25, where Aristotle calls animals with more heat “more valuable” (τιμώτερα) and ascribes to them a “more valuable soul” and a “more valuable [material] nature,” stating that humans are the hottest and purest.

⁴⁸ Cf. also Freudenthal 1995 (pp. 65–70), which argues that Aristotle’s scale of soul functions as well as the particular manner in which each kind of being realizes its soul functions depends at least in part on the levels of vital heat the living being in question has, and that the *scala naturae* that falls out of plotting the scale of being against the various levels of vital heat in existence is a continuous one.

⁴⁹ Freudenthal 1995 (pp. 58, 65–68, 138, and 188).

⁵⁰ See *De Iuv* 19, 477a15–25, and *HA* III 19, 521a2–3.

environment, which will correlate with their way(s) of life and activities.⁵¹ However, the *species-specific* kind of character that humans have, just as the mode of reproduction that is characteristic for them, is determined by their material nature, which is the most perfected of all.⁵²

1.4 *Human Physiology, Blood, and Natural Character*

In the ethnographical passage from the *Politics* (*Pol* VII 7, 1327b18–38), Aristotle described the character profile of the men who are most easily led to virtue as being naturally courageous and intelligent, and hence as being “well mixed” with regard to both of those capacities. As we saw above, Aristotle treats this particular character profile as the standard (or at least the ideal) for human beings as a species in the biological treatises: the hotness and purity of the blood of humans, which they have as a result of having the most perfected material nature, produces natural courage and intelligence as their species-specific character traits. In the biological treatises, Aristotle nowhere appears to offer an explanation for why animals have the particular species-specific material natures and blends of bloods that they have. However, when discussing the various parts of their bodies that operate on food and concoct this food into blood,⁵³ and while giving explanations for why they are present and shaped and located where they are, Aristotle will sometimes point to their structure and functionality as having materially necessitated consequences for the quality of their blood. And, as it turns out, Aristotle believes that only in humans do the particular structure and functionality of all the bodily parts involved in the production of blood produce a “well-mixedness” of blood that is productive of the best natural character profile.

⁵¹ See Lennox 2010b (pp. 329–355). I say “most” because animals such as sponges and starfish are probably too simple and too plantlike to possess character (on sponges and starfish and the like, see *PA* IV 5).

⁵² Cf. Solmsen 1950 (pp. 467–468), who criticizes Aristotle for making “man’s *ethos* and mind dependent on the composition of the blood.”

⁵³ Incoming nourishment is transformed into blood through the process of concoction: roughly speaking, food comes in via the mouth (where it is cut up and ground into smaller pieces in those animals that have teeth), flows through the esophagus (if present) into the stomach, where it is first concocted, and then the product of this concoction moves via the liver (in the blooded animals) to the heart, where it is concocted further and becomes blood. From there the blood distributes over the animal’s body through its blood vessels. On the nutritional system in animals, see especially Detel 1997, Gotthelf 1987 (pp. 178–185), and Lloyd 1996b (pp. 86–90).

The most important organ with regard to the production of blood is the heart, since it provides the source for the heat necessary for the concoction of food and its transformation into blood.⁵⁴ It is also the seat both of the nutritive and the perceptive soul. Differences in the size, structure, and softness of the heart affect the “crafting of blood” (*PA* II 1, 647b5–6) and therefore produce differences in character and perceptive capacities (*PA* III 4, 666b21–667a25 and 667a9–21):

The hearts of the perceptive animals are more articulated, while those of the more sluggish are more unarticulated, as are the hearts of the swine. The differences of the heart with respect to largeness and smallness, and hardness and softness, extend somehow even to the characters (αἱ δὲ διαφοραὶ τῆς καρδίας . . . τείνουσι πῆ καὶ πρὸς τὰ ἦθη). For the imperceptive animals have a heart that is hard and solid, but the perceptive ones have one that is softer. And the animals that have a big heart are timid, while those with smaller- or medium-sized ones are bolder. For the affection that results from being afraid already belongs to those animals, because of the heat in their heart not being in balance (it being small, it gets weakened in the large animals) and the blood being colder. Large hearts have hare, deer, mouse, hyena, ass, leopard, and marten, and pretty much all animals that are clearly timid or devious because of fear.

The size of the heart that each animal has is not something that Aristotle explains as being for the sake of something; rather, the size of the heart simply seems to vary with the size of the animal itself (*PA* III 4, 666b21–667a6): the larger the animal, the bigger its heart, and the more hollow cavities its heart will have.⁵⁵ The best hearts according to Aristotle are those that are articulated and soft (because those promote better perception) and are large enough to accommodate three cavities, such that the receptacle for the first blood is separated from the receptacles connecting to the great blood vessel and the aorta, but not too large, since this promotes courage. The reason the size of the heart matters for an animal’s natural character traits has to do with material necessity: animals with larger hearts are more timid, because by material necessity it is more difficult to heat larger amounts of blood (cf. *PA* III 4, 667a23–25: “for just as in a small and in a big room the same fire produces less heat in the bigger rooms, so too does the heat in these

⁵⁴ See, e.g., *PA* II 3, 650a4–5; *PA* III 7, 670a22–26; *PA* IV 5, 678b1–4; and *De Iuv* 4, 469b1–20.

⁵⁵ Aristotle treats the size of animals as something that is specified in the definition of the substantial being of an animal and therefore as a “given” that cannot be further explained. See, e.g., *PA* IV 6, 683a18–19; *PA* IV 9, 685b12–15; *IA* 8, 708a9–20; *DA* II 4, 416a15–18; *GA* II 6, 745a5–6; and perhaps also *Pol* V 9, 1309b18–35.

parts”), and coolness of blood results in timidity. Animals with smaller- and medium-sized hearts are bolder because it is easier to heat smaller amounts of blood. Aristotle does not here specify the size of the human heart (which presumably fits the ideal type: in *HA* I 17, 496a4–24, Aristotle describes the human heart as having three cavities and as “not large”), but he does spend some time explaining its exceptional location. In other animals, the hearts are located toward the middle, upper, and front of the animal, as equidistant from the organs of perception and the limbs as possible, in order to attain as much as possible a balance of the heat in the heart,⁵⁶ but in humans, the heart is placed slightly to the left “in order to balance” (πρὸς τὸ ἀνισοῦν) the exceptional cold of that area (*PA* III 4, 666b6–11).

In humans, the extreme level of heat in the region around the heart also causes a growth upward from the middle (*PA* II 7, 653a27–37): the hotter the animal’s material nature, the more erect it is, and since humans are hottest, they are the only fully erect animals.⁵⁷ This erect posture consequently allows humans to “reason and think” (τὸ νοεῖν καὶ φρονεῖν) better (*PA* IV 10, 686a25–687a4):⁵⁸ because the origin of perception, the capacity for thought (*dianoia*), and the common sense (all of which are said to be inside the heart) are located *above* the gut, they are less pressed down by the weight of fumes produced during the concoction of incoming food.⁵⁹ This allows their motions to go unimpeded, which increases the accuracy of their perceptive and cognitive capacities, making humans the most *accurate* perceivers (*GA* V 2, 781b18–21) and the most intelligent among animals (*PA* IV 10, 687a9–10: φρονιμώτατον). In short, the perceptual capacities and intelligence of the human species—which are present because these capacities are essential and hence part of the definition of the substantial being of human beings—are made *better*, at least in terms of their accuracy and possibly their speed of

⁵⁶ *PA* III 4, 667a17: ἀνάλογον; *PA* III 4, 665b18–27 and 666a13–17; cf. *PA* II 7, 652a30–33 and b16–23.

⁵⁷ *PA* II 10, 656a12–13; *PA* III 6, 669a25–26 and 669b3–b6.

⁵⁸ Cf. *Somn* 3, 456b18–457a7. See Lennox 1999a (p. 12), Lennox 2001b (p. 318), and Heath 2008 (p. 254).

⁵⁹ In other organisms, combinations of increasingly more earthy material natures (cf. *PA* II 9, 655b14–15) and decreasing levels of internal heat produce heavier weights that press down on their hearts, and, since there is less growth from the middle, this causes their postures to become less erect and more dwarf-like (*PA* IV 10, 686a32–b2 and 686b21–687a4; cf. *PA* IV 12, 695a6–10). Both these facts make their perceptive souls even more “difficult to move and bodily” (*PA* IV 10, 686b28) than they already are, given their earthier material nature, thus making them “less intelligent” than humans (*PA* IV 10, 686b23: ἀφρονέστερα). Plants have their source of heat located *under* the part that corresponds to the head, making them “unable to move and to perceive” (*PA* IV 10, 686b33–34).

operation, as a result of their particular material nature in combination with the structural and operational features of their heart.

Second, with regard to the operation of the heart on blood, the presence of the diaphragm is helpful as well: it separates the region around the gut from that around the heart, “so that the origin of the perceptive soul will be unaffected and not be quickly overpowered” (*PA* III 10, 672b16–17) by the fumes and the heat that arise during the concoction of food in the stomach (*PA* III 10, 672b10–24). Aristotle states that the diaphragm quite literally functions as a “partition wall and a fence” (*PA* III 10, 672b19–20) and is carefully structured with appendages below and not much flesh in the middle so as to fend off as much of the hot moisture arising from the gut as possible. When the diaphragm does absorb this residue “straight away it manifestly disturbs thought and perception” (*PA* III 10, 672b29–30: εὐθὺς ἐπιδήλως ταραττει τὴν διάνοιαν καὶ τὴν αἴσθησιν), which is why some people have called the diaphragm *phrenes*, or midriiffs, “as if they partake in some way in thinking” (*PA* III 10, 672b31: ὡς μετέχουσάι τι τοῦ φρονεῖν). Although the diaphragm does not partake in thinking at all according to Aristotle, he does believe that it can produce “a change of thought” (*PA* III 10, 672b33) or a perception of its own when the body is tickled (i.e., when the tickling motions cause a quick heating of the diaphragm), leading to involuntary thought (*PA* III 10, 672b6: τὴν διάνοιαν παρὰ τὴν προαίρεσιν) and laughter in human beings (*PA* III 10, 672b2–8). Humans, however, have the thickest diaphragm of all animals and thus also have the best protection from below (*HA* I 17, 496b14–15).

A third organ whose size and functioning influences natural character in humans (but also of course in other animals) is the brain, which—like the heart—is a uniform part but which consists solely of earth and very little water and no blood, making it one of the coldest and driest parts in the human body (*PA* II 7, 652a36, 652b1, and 652b22–28). Aristotle claims that “nature has devised [it] with a view to the location of the heart and the heat in it” (*PA* II 7, 652b19–21): through its cooling activity, it makes the heat produced by the heart and the marrow “well mixed” (*PA* II 7, 652b26–27; b26: εὐκρατον) and thereby preserves “the entire nature” of its possessor (*PA* II 7, 652b6–7: τῆς φύσεως ὅλης). When the brain is too cold relative to the proportionate blend or if it gets too moist or dry, its possessor will suffer from fluxes of phlegm or serum from the head or will get sick, mad, or even die (*PA* II 7, 652b33–653a8 and 653b3–8). Fortunately for humans, their brain is the largest and the moistest of all animals (see, e.g., *HA* I 16, 494b27–29, and *PA* II 7, 653a27–28) and therefore possesses extraordinary cooling powers (*PA* II 7, 653a32–33). The resulting well-mixedness (τὴν εὐκρασίαν) of the blood

makes humans exceptionally intelligent (*GA* II 6, 744a30–31) and gives them their unique capacity to smell the odors of flowers (*Sens* 5, 444a28–b7).⁶⁰

A fourth part that is important with regard to preserving the *purity* of human blood is the liver. The liver is a visceral part, which means that it is itself made from bloody materials (*PA* III 4, 665b5–6) and is therefore present only in blooded animals.⁶¹ Aristotle believes that all the viscera together, including the kidneys and the spleen, function as anchors for the blood vessels to the body (*PA* III 7, 670a7–16), but what makes the liver in particular so important is its role in the concoction of food (*PA* III 7, 670a20 and 670a26). As Aristotle explains, “[the liver’s] being of a certain character is a cause of living a shorter or longer time” (*PA* IV 2, 677a36–b5) and the liver “contributes a great deal to the well-mixedness (πρὸς εὐκρασίαν) and the health of the body” (*PA* III 7, 673b25–26). It is mainly responsible for turning incoming food into blood, and the purer the liver itself is (i.e., the fewer “foul residues” are present in the animal; see *PA* III 7, 673b23–24), the purer the blood it produces, the less bilious residue there will be, and the healthier and the longer lived the animal will be (*PA* IV 2, 677a19–35). In humans, this results in the purest blood of all. As a consequence, humans have the softest flesh, which makes them the most perceptually intelligent of all animals with respect to the accuracy of their touch.⁶² However, those humans with relatively harder flesh are “naturally less endowed with respect to intelligence” (ἀφνεῖς τὴν διάνοιαν) than their fellows who are “soft fleshed” (*DA* II 9, 421a23–26).

In sum, human beings have the best heart, diaphragm, brain, and liver of all blooded animals, and the structure, location, and operation of each of these organs—even if they do not possess these features for the sake of producing a specific type of character profile—improve the material qualities of the particular blend of blood humans have and thereby, at least under ideal

⁶⁰ Bloodless animals do not have brains or do so only by analogy. They have little heat and cold (and watery) blood and therefore do not require much cooling (*PA* II 7, 652b24–26); when cooling is required, they “are able to cool themselves by their inborn breath” (*PA* III 6, 669a1–2). Blooded animals sometimes also require additional ways to cool their bodies and do so by drawing in cold air or water from outside through their lungs or gills (*PA* III 6, 668b30–669a6).

⁶¹ None of the bloodless animals have any visceral parts (see *PA* III 4, 665a30); presumably, since their blood is already without fibers, they do not require parts that aid in the purification of blood.

⁶² See *DA* II 9, 421a18–22; *PA* II 16, 660a11–13; and *HA* I 15, 494b16–17. Bodily parts that are made from flesh are also exceptionally thin and perceptive in humans: on lips and tongues, see *PA* II 16, 659b30–32, and *PA* II 17, 660a17–22; on skin, see *HA* III 11, 517b27–28; *GA* V 2, 781b21–22; and *GA* V 5, 785b8–9; cf. also *PA* II 13, 657a30–657b2 on eyelids.

circumstances, produce a blend that is “well mixed” and makes humans naturally courageous and intelligent.⁶³ In the next chapter, I will discuss how not only environmental factors—but also factors such as diet, aging, and disease—can produce regional and other individual differences of the more and the less in the species-specific human character profile, and I offer suggestions on how these differences may make more development easier or more difficult.

⁶³ There is evidence that Aristotle believes that humans are not only the most naturally courageous and intelligent of all animals, but also—with horses—the most gluttonous and lustful of all, and that nature has provided them with coiled intestines and, in men, twisted ducts for semen as well as external testes and a penis so as to temper their food intake and the speed of their sexual reproduction: see *GA* I 4, 717a26–33 and 717b4–b7, and *HA* VI 22, 575b30–31, with *HA* I 16, 495b24–27, and *HA* II 17, 507b21–22.

CHAPTER 2 | Changing Natural Character

2.1 *Introduction*

In the previous chapter, I argued that the material natures of humans or, more specifically, the material properties of their blend of blood and their species-specific level of internal heat produce their species-specific natural character profile. According to Aristotle, humans are more than any other animal prone to natural courage and perceptual intelligence. In this chapter, I argue that because Aristotle sees a tight causal connection between a living being's species-specific natural character profile and its material nature, he also believes that one's *individual* natural character traits are highly susceptible to material-efficient causal changes due to aging and disease, diet, and external environmental factors. All these factors are capable of producing slight differences of the more and the less in the living being's material nature and hence in its natural character. And depending on how large their impact on this material nature is, the temporary or long-term alterations they produce in the natural character profile of individuals can make it more or less difficult for these men to acquire the natural virtues and consequently to acquire moral virtue.

The changeability of natural character and the individual differences of the more and the less that this produces within the species-specific character profile of a given animal kind, and specifically of humans, is the subject of sections 2.2 and 2.3. Section 2.2 discusses the influences of diet, aging, and disease on natural character, while section 2.3 discusses the influence of the environment. I discuss the ethical implications of Aristotle's views about natural character in section 2.4.

2.2 *The Influence of Diet, Aging, and Disease on Natural Character*

The influence of diet on natural character

In the previous chapter, we saw that Aristotle believes that in humans, parts such as the heart, brain, and liver—which have their structure, size, organization, and location for the sake of realizing the function of nutrition—turn out to be such that they promote a certain “well-mixedness” (*eukrasia*) of the blood. This well-mixedness of the blood means that human blood is optimally hot, moist, and pure, and these material properties give rise to the species-specific character profile that humans possess, which most prominently includes natural courage and intelligence. However, since blood is concocted food, diet—that is, the quality and quantity of food a human (or any animal) consumes—is one of the most important factors that can produce individual differences of the more and the less in its species-specific character profile. In other words, individual differences in the diet among members of the same species produce—sometimes short-term, sometimes long-term—differences of the more and the less with regard to their particular blend of blood. This in turn produces slight deviations from their species-specific character profiles, such that, for instance, not all cuckoos will be equally cowardly (all the time), and not all men will be equally easy to habituate.¹ The wrong or insufficient diet—especially if taken over longer periods of time—not only can make people sick,² but also too rash or cowardly, and can hinder their perceptual accuracy and thinking, thereby making them less intelligent. It is no surprise, then, that Aristotle sometimes groups natural character and food together as some of the most basic causal factors that characterize a particular kind of animal. In fact, he suggests that nature organizes some of the other differentiae an animal has, such as their actions and way of life, with a view to their character traits and diet, while treating the latter as givens (see *HA VIII* 1, 588a18–19: “their actions and ways of life differ in accordance with their characters and foods”).³

¹ Differences in diet also produce differences of the more and the less in the attributes of animals, such as in the colors of their skin and hair and feathers, and perhaps also by changing the particular blend of their blood and the residues thereof: see *GA V* 6, 786a34–b5.

² *PA II* 3, 650a35–b2: “. . . and therefore it [i.e., blood] falls short for those who do not take in food and increases for those who do, and when the food is useful, it is healthy, when bad, [the blood] is bad.”

³ See also *HA VIII* 2, 590a13–18: “Animals then have been divided into water dweller and land dweller in three ways: in virtue of receiving air or water, in virtue of the blend of their bodies, and third in virtue of their foods, and their ways of life are in accordance with those divisions

The intake of nourishment is itself of course primarily a matter of life and death: as Aristotle points out frequently, “it is not possible” for a plant or animal “to exist or grow without food.”⁴ All nutriment consists of a *combination* of something moist and dry, or water and earth.⁵ Exactly what nutriment is appropriate for each species is determined primarily by the animal species’ own elemental makeup (*HA VIII 1, 589a2–9*):

One part of their life consists in actions concerning the production of offspring, and a second, other part consists in those concerning food. For all their efforts and their life are about those two [kinds of actions]. And the foods differ *mostly* in accordance with the matter out of which they are each constituted (αἱ δὲ τροφαὶ διαφέρουσι μάλιστα κατὰ τὴν ὕλην ἐξ οἴας συνεστήκασιν); for by nature the growth of each comes to be from this [material]. And that which is in conformity with nature is pleasant, and all [animals] pursue what is naturally pleasant.

As Aristotle explains in this passage, animals eat the kinds of food that *after concoction*⁶ “chemically” match the “recipe” of their own material nature: they grow from the kinds of materials out of which they themselves are constituted (cf. *GC II 8, 335a10–11*: “for all are fed by that from which they are constituted”).⁷ Animals recognize what foods are appropriate to them by the sense of pleasure they get from eating them: whatever foods are in accordance with their nature taste, smell, and even sound pleasant.⁸

(ἀκολουθοῦσιν οἱ βίοι κατὰ ταύτας τὰς διαρέσεις). For some animals follow [in their being either a water dweller or a land dweller] the blend and the food as well as the receiving of water or air, but others [follow] only their blend and their ways of life.” Cf. *Pol I 8, 1256a19–22*: “but there are many kinds of food, and therefore there are also many ways of life both of animals and of human beings. For it is not possible to live without food, such that the differences in food have made differences in the ways of life of animals” (ὥστε αἱ διαφοραὶ τῆς τροφῆς τοὺς βίους πεποῖκασιν διαφέροντας τῶν ζώων).

⁴ *PA II 10, 655b31–32; PA I 1, 642a7–8; DA III 12, 434a22–26; Meta V 5, 1015a20–22; and Pol I 8, 1256a21.*

⁵ *PA II 3, 650a3–4, and Sens 4, 441b25–27; cf. DA II 3, 414b7–8; PA II 16, 658b35–659a2; PA III 5, 668b8–10; PA III 8, 671a3–4; and GA III 11, 762b6–15.* This is necessary because Aristotle defines concoction as “a process of perfection, by the natural and appropriate heat, out of the *passive* opposites [i.e. the wet and the dry]” (*Meteor IV 2, 379b18–19*), such that only these two are “the appropriate matter for each thing” (*Meteor IV 2, 379b20*).

⁶ See *DA II 4, 416a21–b9; cf. GC I 5, 321b35–322a27, and Ph VIII 7, 260a29–b2 (a31–32*: “for food is said to be the opposite to an opposite, but each thing gets added by like becoming like”). On this, see also Polansky 2007 (pp. 214–216).

⁷ Cf. *HA VIII 2, especially 590a13–18.*

⁸ *PA II 17, 661a2–8; DA II 3, 414b11–13; Sens 1, 436b15–18, and Sens 5, 443b21–24; EN IV 11, 1197a7–8; EN III 10, 1181a16–23; and HA VIII 8, 595b22–26* (“For to the extent that the beasts of

The specific location in which a given animal finds its food can produce differences of the more and the less in the quality of the food, and this too can have consequences for its natural character. Just as the parts of animals associated with nourishment differ in “accordance with the places in which they take their food” (*PA* IV 5, 678b4–7),⁹ so too, presumably, do their character traits (see *HA* VIII 28, 606b17–19: “In general, wild animals are wildest in Asia, all are the bravest in Europe, and the most diverse in form in Libya”). Although Aristotle never says this explicitly, presumably the closer an animal’s actual food intake is to its species-appropriate diet, the better the animal will be able to concoct and digest it, and the healthier and the closer to its species-specific character profile it will be.

Aristotle gives only a handful of examples of how particular foods can cause mostly temporary changes in the character of animals and humans. The clearest example is the consumption of wine: the Indian parrot becomes “more intemperate when it drinks wine” (*HA* VIII 12, 597b27–29); men, when drunk, exhibit a kind of courage that is due to hope, for “wine makes them hopeful” (*EE* III 1, 1229a18–20), or they become more riotous (*Pol* VIII 7, 1342b26–27), and women, when pregnant, “become relaxed and debilitated when they drink [wine]” (*HA* VII 5, 585a32–33).

Similarly, the author of the *Problems*¹⁰ describes the gradual character changes a person undergoes with each sip of wine he drinks, where each temporary character state thus produced corresponds to a character trait that humans naturally possess (*Pr* XXX 1, 953b7–11):

Just as, therefore, one person changes his character when he drinks and takes wine in a certain quantities, so too there are several men who embody each character (ὡςπερ οὖν ὁ εἷς ἄνθρωπος μεταβάλλει τὸ ἦθος πίνων καὶ χρώμενος τῷ οἴνῳ ποσῶ τινί, οὕτω καθ’ ἕκαστον τὸ ἦθος εἰσὶ τινες ἄνθρωποι). For the way

burden drink water, to that extent they also have their food with a view to pleasure, and where the drink is less disgusting, it is also more fattening.”).

⁹ Cf. also Aristotle’s discussion of birds in *PA* IV 12, 693a11–23, and the camel in *PA* III 14, 674a28–674b18. On the camel and how its body is functionally designed to eat and digest the food that is available in its environment (rather than the other way around), see Gotthelf 1987 (p. 192), Pellegrin 2002 (p. 312), and Scharle 2008 (pp. 164–165).

¹⁰ Many of the problems collected in the *Problems* go back to Aristotle or are at least Aristotelian in origin, with later students of the Peripatos adding or changing or even removing some of the original problems. I therefore draw from the *Problems* when they provide materials that seem directly relevant for our understanding of natural character and for how it is influenced by factors such as diet, aging, disease, and environment. For my take on the *Problems*, see Leunissen 2015b (pp. 190–213).

one person is now while drunk, another is that way by nature—one person is talkative; another, emotional; another, easily moved to tears; for it [i.e., wine] does such things to some people . . .

The explanation of why these changes occur is that wine mimics the natural material-efficient causes that normally produce these character traits:¹¹ wine—especially red wine—contains heat and air, which, when absorbed into the body, heats the blood¹² and inflates the sexual organs with breath.¹³ This increases one’s spirit (*thumos*), resulting in natural courage or rashness, irascibility, intemperance, and other spirit-fueled natural character traits. By contrast, foods such as mint cool down one’s normal heat level of the blood and thereby produce cowardice.¹⁴

Presumably, the *amount* of food available can also produce changes in character, but Aristotle mentions only animal examples for this case, claiming that animals become less agonistic to each other and less wild and more domesticated toward humans, the more food is available to them.¹⁵

The influence of aging on natural character

Another factor that produces individual changes of the more and the less in the species-specific natural character profile of animals and humans alike is aging. Unlike diet, which could potentially be adjusted and regulated in order to promote the ideal qualities of the blood in humans, aging is not something that can be controlled. Yet it too affects natural character, and it does so in accordance with a fixed, predictable pattern.

According to Aristotle, all living beings are hottest and moistest at birth. He defines aging as the process of slowly cooling down and drying up: the

¹¹ See *Pr* XXX 1, 953b17–954a11; (953b20–22: “such that it is clear that wine and nature produce the character of each through the same means”).

¹² Cf. *Rh* II 12, 1389a18–19: “just as men overcome by wine, so too are young people thoroughly heated—διὰ θερμοῖ—by their nature.”

¹³ Cf. *Somn* 3, 457a14–17, and *Insomn* 3, 461a23–25, where Aristotle states that drinking wine causes a kind of “windy affection” that results in many motions and disturbances.

¹⁴ *Pr* XX 2, 923a8–11.

¹⁵ *HA* IX 1, 608b19–609a3; cf. also *HA* V 8, 542a27–28; *HA* VI 18, 572a2–3; and *HA* IX 2, 610b11–14. In the *Problemata* (*Pr* X 45, 895b23–896a11), the author questions why it is that tame animals also occur in a wild state, whereas animals that are wild are not always found in a tame state. He proposes that whereas wildness is the inferior condition, which is therefore more easily acquired in the beginning and more easy to change into, tameness is good (cf. *Pol* I 5, 1254b10–13) and therefore more difficult to achieve: just as it is more difficult in art to always produce good products, so it is in nature.

body first reaches a kind of perfection during adulthood; that is, the body becomes appropriately hot and moist but then starts to decline by becoming colder and drier¹⁶ until death occurs, which is understood as the complete extinction of internal heat. The drying that is part of the aging process is itself a necessary concomitant of the gradual loss of internal heat, since it becomes increasingly difficult for cooler bodies to draw in and retain moisture.¹⁷ Animals age more slowly and therefore live longer either if they are very hot or if their moisture is plentiful or high in quality (by which he means warm and fatty). Humans are among the longest-living animals because of the heat of their moisture, and, among them, men live longer than women because they are hotter.¹⁸

Because aging changes the quality of blood from one extreme (i.e., from extremely hot and moist) to the other (i.e., to extreme cold and dryness),¹⁹ this process also affects natural character and produces differences of the more and the less with regard to the species-specific character profile of humans. In his *Rhetoric*, Aristotle suggests that aging, and in particular the cooling of the blood that is associated with it, causes two distinct shifts in the typical natural character profile of men, such that the young, the old, and those in their prime each is recognizable by his own distinct character profile.²⁰ He says, for instance, that young men are hopeful, love honor and victory, and “live in accordance with their character more than in accordance with reason.” His explanation for the abundance of these particular traits in the young is that they are being heated and are full of spirit. This excess of heat and spirit makes them powerless against their (mostly sexual) desires, and they are unable to feel fear because of their anger and are thus courageous (or even rash) by default. According to Aristotle, young men are thus not fully in control over their traits, desires,

¹⁶ GA IV 2, 766b30–31.

¹⁷ *Long* 5, 466a18–25; *Juv* 4, 469b8–20; *Resp* 17, 478b22–479a28; GA V 3, 783b2–8; and GA V 4, 784a30–784b1. Cf. Freudenthal 1995 (pp. 155–156).

¹⁸ *Long* 5, 466a33–b2, and *Long* 5, 466b16–18.

¹⁹ HA III 19, 521a31–b2: “for in the very young it [i.e., blood] looks like ichor and is abundant but in the old is thick and black and scarce, and in those who are in their prime it is in between.”

²⁰ *Rh* II 12–14. The more general purpose of the entire section of which these chapters are part (i.e., *Rh* II 12–17) is to explain how a speaker must adapt his character and his speech to that of his audience so as to successfully persuade them (cf. *Rh* II 12, 1390a24–27, and *Rh* I 8, 1366a8–16), and this includes knowing which natural character traits are typical for men who belong to different age groups.

and actions: young men are in a similar physiological condition as those who are drunk.²¹

Aristotle characterizes old men (“those who are past their prime”) as pessimistic, distrustful, and cowardly; as loving life and themselves; and as tending to act in insufficient ways and “in accordance with reason more than in accordance with their character.” Old men thus possess almost the exact opposite character profile of young men, and, as becomes clear from Aristotle’s material-causal explanation of their cowardice, also almost the exact opposite blood profile (*Rh* II 13, 1389b29–32):

For they are cowardly and always anticipating danger. For they are in the opposite condition as the young: for they are cold, whereas [the young] are hot (ἐναντιῶς γὰρ διάκεινται τοῖς νέοις· κατεψυγμένοι γὰρ εἰσιν, οἱ δὲ θερμοί), such that old age has paved the way for cowardice—for fear is a kind of chilling.

He also stresses that what appears to be a virtue of the old (namely, their self-control) is really just a result of their desires having slackened and having lost their power (*Rh* II 13, 1390a14–15).

Finally, Aristotle says that men in their prime have a character that is “in between both of those [i.e., of the young and the old], subtracting the extreme.”²² Consequently, they are neither too rash, nor too fearful, but rather “are well disposed toward both” (*Rh* II 14, 1390a31: καλῶς δὲ πρὸς ἄμφω ἔχοντες). They trust other people appropriately, live their lives both with a view to what is noble and to what is useful, have the right attitude toward possessions, and are both courageous and temperate. “To put it generally,” Aristotle says at the end of his exposition, “as many of the beneficial [character traits] that youth and old age divide between them, those they [i.e., men in their prime] have both, and as many as they have in excess or in lack, [they have] the moderate and the fitting [version] of them.”²³ Aristotle does not explain these “intermediate” traits explicitly in terms of the material natures of these men. However, his specification at the end of the chapter of the ages at which body and soul are at their prime (thirty to thirty-five for the former, forty-nine for the latter) suggests a connection between biological

²¹ *Rh* II 12, 1389a18–20: “for just as those overcome by wine, so too are the young thoroughly heated because of their nature”; cf. *EN* VII 14, 1154b9–10: “Similarly in youth, people are—because of the growth that is going on—in a bodily condition similar to those who are drunk (ὡσπερ οἱ οἰνωμένοι διάκεινται) . . .”

²² *Rh* II 14, 1390a28–29: μεταξὺ τούτων τὸ ἦθος ἔσονται ἑκατέρων, ἀφαιρούντες τὴν ὑπερβολήν.

²³ *Rh* II 14, 1390b6–9.

maturation or perfection (in the form of the internal heat reaching an appropriate, intermediate level) and the acquisition of the “optimal” combination of natural character traits at this stage in life. Presumably, then, men in their prime naturally approximate a well-mixedness of blood, making them—as we saw above—naturally courageous and intelligent.

The upshot of this brief overview is thus that while Aristotle believes that a person who is not fully habituated still acts and feels the way he does on account of his natural character traits, those traits themselves (as long as they are capacities and not yet shaped into stable dispositions) change *naturally* with age—for the better²⁴ or worse—and are not stable over time.

The influence of diseases on natural character

Another factor that affects natural character traits for longer or shorter periods of time is disease. Aristotle defines health as a balanced proportion of the mixture of bodily elements and in particular of the blood, while disease is the opposite of this.²⁵ Diseases produce temporary or chronic disturbances in the particular blend of blood one has and thereby also lead to temporary or chronic differences of the more and the less in one’s character profile. These diseases themselves can come to be due to all kinds of causes: too-much or too-little exercise, food, or drink can cause illnesses, and presumably so does the quality of the water one drinks (*GA* IV 2, 767a28–35). In general, any kind of defect or excess is bad and can produce illnesses (*EN* II 2, 1104a11–18). According to Aristotle, diseases are thus “against nature” in the sense that they disturb rather than preserve the well-mixedness of the body and the blood (*EE* II 1, 1219b26–28).

Aristotle mentions that disease is one of the causes of savage character in humans,²⁶ but otherwise he never mentions any causal connections between temporary diseases and natural character in the extant treatises.²⁷ However, he does regularly mention natural constitution types that involve chronic diseases, such as the phlegmatics, choleric, lethargic, and melancholic,²⁸

²⁴ Aging can push natural character toward virtue: see *EN* IV 1, 1121a20–25 on the prodigal man, who is “easily cured both through aging and through poverty and is able to move toward the mean.”

²⁵ *Ph* VII 3, 246b5–6; cf. *Top* VI 2, 139b20–21, and *APo* I 13, 78b18–20.

²⁶ *EN* VII 1, 1145a29–32 and VII 5 *passim*.

²⁷ Unfortunately, Aristotle’s treatise on diseases—referred to in *PA* II 7, 653a8–10; *Sens* 1, 436a18–b2; and *Resp* 21, 480b22–31—is not extant.

²⁸ See, e.g., *Meta* I 1, 981a11–12; *Somn* 3, 457a3; and *Div Somn* 2, 463b17.

all of which are associated with specific character profiles. For instance, Aristotle characterizes someone with a melancholic constitution as resembling someone with a permanent state of fever or drunkenness,²⁹ which is a “spirituous” affection and is sometimes associated with the overabundance of black bile in the body (bile is a byproduct or residue of impure, earthy blood).³⁰ Aristotle describes those who are melancholic as suffering from various bodily disorders, which result in, for instance, weakness of will due to impetuosity.³¹

The author of *Problems* XXX 1 offers another interesting perspective on the causal relation between melancholy and character. The question the author sets out to answer in this *Problem* is why “all men who became remarkable in philosophy or politics or poetry or the arts turn out to be melancholics?” (*Pr* XXX 1, 953a10–12). As it turns out, answering this question involves showing, among other things, that melancholy, which has a wide range of symptoms, is in fact based on one coherent physiological condition *and* that it is this same condition that is responsible for the excellence of melancholics in such a wide range of disciplines.³² What is interesting for our purposes is, first, that the author draws a distinction between melancholy as a disease and melancholy as a permanent natural condition, where those who are permanently melancholic are said to be more prone to melancholic diseases and are characterized as having a certain nature or mixture.³³ The suggestion is thus that the disturbance of the elemental blend of the body that exists only temporarily in some people is permanent in others—their *krasis* is permanently off balance and therefore more sensitive to subsequent disturbances. The black bile that is a residue from the natural food taken in daily produces diseases in those with normal conditions, but in those who are already melancholic by nature, black bile has much-stronger and more-lasting effects: “they immediately develop diverse characters in accordance

²⁹ *Div Somn* 2, 463b17. My discussion of melancholy here relies heavily on van der Eijk 2005b. See especially van der Eijk 2005b, p. 151: “It also becomes clear that the difference between constitution and disease, which is problematic in any case, fails because of the nature of the Aristotelian concept of melancholy: the melancholic is, so to say, constitutionally ill.”

³⁰ *PA* IV 2, 677a19–b10, and *Insomn* 3, 461a22–26 (25: πάθη πνευματώδη). It is important to note though that there does not seem to be one consistent physiology that underlies all cases of melancholy in the Aristotelian corpus: on this see, van der Eijk 2005b (p. 154).

³¹ *EN* VII 7, 1150b19–28, and *EN* VII 10, 1152a19.

³² van der Eijk 2005b (p. 156).

³³ *Pr* XXX 1, 953a29–32 (e.g., 953a30: ἡ φύσις and κράσεως τῷ σώματι; 953b23: ἡ κράσις ἢ τῆς μελαίνης χολῆς; 954a13: θερμοῦ γὰρ καὶ ψυχροῦ κράσις ἐστίν; 954a28: κράσις τοιαύτη; 954a38: φυσικῇ κράσει).

with their various temperaments.”³⁴ This brings us to the second interesting point in this text: the author explicitly ascribes “character-changing” and “character-shaping” properties to melancholy³⁵ and—just like Aristotle—compares its effects to those who drink large quantities of wine (953a32–954a11). Both wine and black bile are said to be full of air, and apparently differences in the heating or the cooling or the quantities of these substances produce different character traits in those who are full of them. This point is made most explicitly in the summary section at the end of the *Problem* (955a32–35):

Because it [i.e., the power of black bile] is character producing (ἡθοποιός)—for the hot and the cold are more character producing (ἡθοποιόν) than anything else in us, just as wine mixed in with our body to a greater or lesser extent, it produces each of our individual characters (ποιεῖ τὸ ἦθος ποιούς τινὰς ἡμᾶς).

However, while the effects of wine are temporary, the ones “of nature”—i.e., the natural condition of melancholy—are permanent. From this, the author concludes that “it is clear that through the same means wine and the nature of each produce character” (953b20–22: ὥστε δῆλον ὅτι διὰ τὸ αὐτὸ ποιεῖ ὁ τε οἶνος καὶ ἡ φύσις ἐκάστου τὸ ἦθος). Thus, black bile, when unheated (black bile is naturally cold) and when present in excess, produces fear-related traits, whereas when it is overheated, it produces cheerfulness (954a21–26); when black bile is added to those who are already full of cold or hot black bile, the results are even more diverse, depending on the properties of their mixture (954a30–39, 954b6–8). The author is quick to point out the instability of the melancholic condition, which contributes to its having such widely different effects on character (954b8–9: ἡ δὲ μελαγχολικὴ κρᾶσις . . . αὐτὴ ἀνώμαλός ἐστιν; cf. 955a29–31). However, he concludes that, since even an unstable condition can be “well mixed” (εὐκρατον) and “well disposed” (καλῶς πως ἔχειν), “all melancholics are remarkable, not due to disease but due to nature” (955a36–40), and therewith he answers the original problem.

This brief analysis of the text of *Problems* XXX 1 supports the idea that we have already encountered in Aristotle’s own treatises (namely, that bodily *krasis* and natural character traits are causally connected), but it also

³⁴ *Pr* XXX 1, 954a29–30: εὐθὺς οὗτοι τὰ ἦθη γίνονται παντοδαποί, ἄλλος κατ’ ἄλλην κρᾶσιν; cf. 954b19–21.

³⁵ *Pr* XXX 1, 953a35: ἦθη ποιεῖν; 953b7: μεταβάλλει τὸ ἦθος; 954a24: ποιεῖ; 954a27: τὸ ἦθος ποιεῖ; 954b21: ποιοὶ τινὲς εἰσι τὰ ἦθη.

illustrates—perhaps more than any other Aristotelian text—how unstable both are and consequently how they can still be changed for longer or shorter periods of time.³⁶

2.3 *The Influence of Environmental Factors on Natural Character*

The influence of environmental factors on the features of animals, including character

In the biological treatises, Aristotle often claims that environmental factors—which include not only local climate and temperature and seasonal changes but also the material properties of the natural habitat in which a particular kind of animal lives—produce a change or a differentiation of the more and the less in the features, parts, and behaviors of animals.³⁷ Natural character, too, appears to be under the influence of the locale in which an animal lives (*HA VIII 29, 607a9*): “places produce differences also with regard to characters” (ποιούσι δ’ οἱ τόποι διαφέροντα καὶ τὰ ἦθη). As an example, Aristotle mentions that animals living in rugged mountainous areas are fiercer and bolder than those living in the mild plains are (*HA VIII 29, 607a9–13*)—the rougher the locale, the tougher the character of the animals that live there.³⁸

The explanation for this is that each environment (τὸ περιέχον) has its own particular blend (κρᾶσις) of hot and cold, or dry and moist, and that this environmental blend is in constant interaction with the material natures of

³⁶ The only example of something that produces a permanent change in the natural character of its possessor is the procedure of being castrated (*HA IX 50, 631b19–21*): “some animals change their form and character, not only at certain ages and at certain seasons, but in consequence of having been castrated (μεταβάλλει δὲ τὰ ζῷα οὐ μόνον τὰς μορφὰς ἕνια καὶ τὸ ἦθος κατὰ τὰς ἡλικίας καὶ τὰς ὥρας, ἀλλὰ καὶ ἐκτεμνόμενα), and all animals possessed of testicles may be submitted to this operation.”

³⁷ *HA VIII 28, 605b22*: “animals differ also in accordance with their locales” (διαφέρει δὲ τὰ ζῷα καὶ κατὰ τοὺς τόπους), and *GA III 11, 761b13–15*: “one may assign plants to the earth, water animals to the water, and land animals to the air, but the more and the less and the closer by and the further away make a great and astonishing difference.” See also *HA V 11, 543b18–31*; *HA VIII 12–17* (changes in response to the cold of winter), 18–20 (seasons and temperatures during which animals thrive or languish), and 28–29 (variations in bodies, behaviors, and character among animals due to differences in climate); *GA III 2, 752b28–35*; *GA IV 2, 767a28–35*; *GA V 2, 781a33–34*; and *GA V 6, 786a30–34*.

³⁸ The idea that tough or mild environments produce corresponding character traits is common in Hippocrates *Airs* 12–24 and also occurs in Herodotus *Hist* 9.122.3. In Aristotle, cf. perhaps *HA VIII 28, 606b17–19*.

the living beings it surrounds.³⁹ If this interaction between the environmental and bodily elements produces a proportionate blend and hence a stable balance between the contrary material potentials, the animal will be healthy and long lived.⁴⁰ This kind of healthful, life-preserving balance is achieved most easily when the material properties of the environment match the animal's own material nature, as is the case when the animal lives in its own proper location⁴¹ (*Resp* 14, 477b14–17):

For contrary places and seasons preserve the [bodily] dispositions that have excesses,⁴² but the [material] nature is preserved mostly in their proper locations.

Accordingly, Aristotle believes that plants, which consist mostly out of earth, thrive in the dry environment of the land; water animals, which are constituted mostly of water, thrive in the moist environment of the water, and winged animals and land animals, which are constituted mostly of air and fire, respectively, thrive in the warm environment of the air (*Resp* 13, 477a27–31, and *Resp* 14, 477b30–478a1). However, even within the confines of their own proper location, differences of the more and the less in environmental factors can cause temporary or chronic changes in the animal's bodily blend. Some of these changes can lead to the destruction, putrefaction, or disease of the animal,⁴³ but others merely produce differences of the more and the less among the outward, visible affections of animals. For instance, Aristotle argues that moistness or dryness in the environment causes hair to become moist or more dry, which in turn causes it to become straight or curly (*GA* V 3, 782b33–783a1):

And for this reason the Scythians on the Black Sea and the Thracians are straight haired, for both they themselves and the surrounding air are moist

³⁹ *DL* 3, 465b25–29: “the environment acts with or against [living beings]: and because of this, things that change become more or less enduring than their nature [warrants]”; cf. also *Ph* VII 3, 246b5–6; *Ph* VIII 2, 253a7–21; and *GA* IV 10, 777b6–8.

⁴⁰ On Aristotle's notion of the environment, see also Thompson 1910, ad 589b, and Freudenthal 1995 (p. 13); on the importance of proportionate blends in Aristotle's biology, see Tracy 1969 (pp. 163–174).

⁴¹ Cf. *Pol* VII 11, 1330a34–b17: certain locations are more healthful for people to live and build cities than others.

⁴² In addition, contrary locations can “fix” excesses in disposition because in those cases “the location reduces to a mean the excess of the disposition” (*Resp* 14, 478a3–4: ἐπανισοῖ γὰρ εἰς τὸ μέτριον ὁ τόπος τὴν τῆς ἕξεως ὑπερβολήν). Cf. also *Pr* I 3, 859a9–24, about how seasonal changes interact with diseases, and *Pr* I 11, 860b8–14, where the author explains how the dryness of the summer can bring about *eukrasia* in phlegmatics and women, who suffer from permanent wetness.

⁴³ *GA* IV 10, 777b28–30; cf. *Meteor* IV 1, 378b27–379a14.

(καὶ γὰρ αὐτοὶ ὑγροὶ καὶ ὁ περιέχων αὐτοὺς ἀήρ ὑγρός), whereas the Ethiopians and those living in hot countries are curly haired, for their brains and the surrounding air are dry (ξηροὶ γὰρ οἱ ἐγκέφαλοι καὶ ὁ ἀήρ ὁ περιέχων).⁴⁴

The causal mechanism Aristotle appeals to in these cases is the principle of like by like: external dryness dries out the parts of (in this case human) animals, thereby changing their chemical composition and bodily blend, whereas external moistness adds moisture to them.

Aristotle offers no explicit causal explanations of how environmental factors produce differences of the more and the less in the natural character profiles of animals, but the author of the *Problems* offers the following account (*Pr* XIV 8, 909b9–13, and *Pr* XIV 16, 910a37–b8):

Why are those who live in warm regions cowardly, while men who live in cold regions are courageous? Is it because their nature is the *opposite* from the regions and the seasons (ἢ ὅτι ἐναντίως τοῖς τόποις καὶ ταῖς ὥραις ἢ φύσις ἔχει), since one would quickly burn up if both were the same? And courageous are those who are hot in nature and cowardly those who are cold. It results that those living in hot regions become cooled (because their bodies are thin the heat escapes out of them) and those living in cold regions become heated in their nature on account of their flesh being condensed through the external cold, and when it is condensed it collects the heat internally.

The suggestion is that, if the material natures of humans assimilated to, rather than counteracted, the differences of the more and the less in the material properties of the surrounding air, the resulting blend would be “too extreme” and therefore detrimental to them. In addition, the external heat or cold of the environment produces—of material necessity—changes in the human body, which in their turn cause changes in their material constitution. This results in the differentiation of natural character: external heat thins the skin, which causes internal heat to escape, and this then cools people living in hot environments, making them cowardly; external cold, on the other hand, condenses the skin, which locks in the internal heat, causing people living in cold regions to heat up, making them spirited and courageous. In other words, the author of the *Problems* conjoins two alternative but complementary explanations, one involving the principle of compensation,⁴⁵ and

⁴⁴ See also *GA* V 3, 783a11–32 and 784a12–20, and *GA* V 7, 788a16–20.

⁴⁵ Cf. Heath 2008 (p. 254, n. 24).

one involving the operation of material necessity on the bodies of the people involved by the principle of like by like.

A causal explanation of the regional differences in natural character as suggested in *Politics* VII 7

In his observation about the ethnographic distributions of natural character among humans in *Politics* VII 7, Aristotle states that those Greeks who have capacities both for courage and intelligence have a nature that is “well mixed” (εὖ κέκραται)—a characterization that in the biological treatises applies typically to the unique *species-specific* material properties of the blood of humans. Presumably, then, given the parallels with the causal schema of different character profiles from the *Parts of Animals* II 2–4 discussed in chapter 1, the differences in character between people living in different regions must be due to their individual material natures. More specifically, they are due to the properties of the blend of their blood being slightly *off balance* in one direction or another relative to the species-specific human ideal, causing them to approximate, in a sense,⁴⁶ the species-specific natural character traits of, for instance, bulls or deer (for a schematic representation, see Table 2.1 below). As suggested above, such differences of the more and the less may either be due to their material nature *having to compensate* for the extremities in the surrounding temperature or moistness, or simply be the result of those extremities producing, through the principle of like by like, certain materially necessary changes in the human body. In either case, it is an external efficient cause that produces the regional or individual differentiation in character.

The underlying physiology of people living in cold regions will be something like this: given that the “standard,” species-specific material nature of humans is to be the hottest, moistest, and least earthy of all blooded animals, Aristotle’s suggestion that the external coldness of the environment produces spirit and a lack of intelligence means that people such as the Europeans⁴⁷ are, first of all, hotter than “well-mixed” humans. Any increase in internal

⁴⁶ That is, every human will have blood that is hotter, moister, and purer than that of any other blooded animal, but among humans, some will have blood that is even hotter and less pure than is ideal for humans, and their blood profile will therefore *resemble* that of bulls, but without being *identical* to it. Environmental factors cannot change a human blood type into that of an entirely different kind of species; the variations in blood are differences of the more and the less, not of kind.

⁴⁷ Elsewhere Aristotle singles out Scythia and the region of the Celts beyond Iberia as being especially cold: see *GA* II 8, 748a25–26, *HA* VIII 25, 605a20–22; and *HA* VIII 28, 606b2–5.

TABLE 2.1 Aristotle's Ethnographical Account of Human Natural Character (on the Basis of *Pol* VII 7)

LOCATION	ENVIRONMENT	TYPE OF BLOOD	CHARACTER	
			TRAITS	RESEMBLES
North	cold and wet	hotter and thicker (and thus earthier and dryer) than what is ideal for the human species	strength, spiritedness, stupidity	Bulls, boars (young men)
Middle	"well-mixed" (appropriately hot and moist)	hot, thin, and pure (i.e., very little earth), in accordance with what is ideal for the human species	courage, intelligence	Well-mixed, "ideal" humans (men in their prime)
South	hot and dry	colder and thinner (and thus purer and moister) than what is ideal for the human species	timidity, cowardice, intelligence	Deer, bees (old men)

heat, whether induced by natural efficient causes (such as by young age, by way of compensation for the external cold, or by thicker skin preventing the internal heat to escape) or artificially (such as through the consumption of wine), accounts for the increase in the level of spiritedness of the human in question. However, elevated levels of heat do not by themselves explain why people in cold regions are also lacking in intelligence (especially since Aristotle generally associates the extreme level of heat in humans with their higher intelligence). Although the excess of spiritedness may contribute to this impairment,⁴⁸ Aristotle's treatment of (perceptual) intelligence in the biological works suggests an alternative explanation, which is that these people also have less pure, thicker, and earthier blood and therefore possess less accurate sense organs. The increased earthiness of the blood of the people in question could result either from nature compensating for the external moistness of the environment⁴⁹ or from the drying effects of the elevated internal heat and the condensing effects of the external cold (cf. *Meteor* IV

⁴⁸ Heath 2008 (pp. 253–258) offers this as the sole cause of the cognitive impairment of people living in cold regions.

⁴⁹ Aristotle characterizes northern regions as being cold and moist in *GA* V 3, 782b33–783a1, and southern regions as being hot and dry in *PA* II 9, 655a9–10. Cf. Kraut 1997 (pp. 92–93).

6, 383a16–17), or even from a combination of both (spirit comes to be more in bodies that are leaner and drier: *GA* III 1, 749b31–34). In this way, people living in cold regions broadly resemble the characteristics Aristotle ascribes to animals with hot and thick blood, which are strong and spirited but also less intelligent.

The physiology of people living in hot regions is off balance in the other direction: Aristotle’s implication that external heat causes a lack of spirit suggests that people such as the Asians are, first of all, colder, since cooling produces the opposite from courage and spirit (as happens in the elderly or in those eating mint, as we saw above). Second, they are also thinner, more watery, and purer in their material nature than “well-mixed” humans, and this enhances or at least preserves their perceptual intelligence. With regard to their characteristics, these people therefore broadly resemble animals with cold and thin blood, which Aristotle characterizes as intelligent but also as timid and cowardly.

Finally, the people with a “well-mixed” material nature live somewhere in between these two regions and participate in the positives of both character types (i.e., they possess both spirit and intelligence). The explanation for this is that the region in which they live is neither extremely cold nor hot, nor extremely moist or dry, but rather is itself “well mixed” in terms of climate, which preserves the human species-specific material nature and therefore preserves the well-mixedness of their blood.⁵⁰ Their material natures are thus most in accordance with the species-specific “ideal” for human beings, which is hot (but not too hot), moist, and with very little earth.⁵¹ Thus, some tribes or individuals among the Greek nations match the characteristics Aristotle attributes to living beings with the third and best kind of blood, which makes them “at once in a good condition with regard both to courage and intelligence” (*PA* II 2, 648a9–11).⁵²

⁵⁰ Perhaps Aristotle has in mind here the *endoxon* that only the Athenians are well mixed because only they live in a well-mixed climate. Cf. Plato *Tim* 24c5–d3, where Athena is said to have chosen the specific location for her city on the grounds that it had a “well-mixedness of seasons” (c6: τὴν εὐκρασίαν τῶν ὥρων), such that it would produce “the most intelligent men” (c7: φρονιμωτάτους ἄνδρας) and men who are lovers of war and wisdom like her.

⁵¹ It is possible that Aristotle also believes that nonhuman animals most conform to the species-specific “norm” in parts of Greece with regard to their natural characters, whereas animals living in other regions exhibit differences of the more and the less (see perhaps *HA* VIII 28, 606b17–19).

⁵² Cf. also *Pr* XIV 1, 909a13–17 (15: “for the best blend benefits [not only the body but] also the mind”).

If this interpretation is right, then our individual *natural* character traits—and thereby the feelings and actions these traits dispose us to *before we become habituated in a certain way*—are largely outside our control. Whether we are, relative to our species-specific character profile, more prone to courage or to cowardice depends on whether we grew up in a cold or a hot environment, are young or old, or happened to have consumed mint or wine. And although the northern European living in northern Europe for the most part will be spirited and dumb and will feel and act accordingly, it is not clear that the same will be true on a hot summer's day or when he is having a cold, or once he (or his son, or perhaps his baby boy, who was conceived after a permanent change of environment, for example) moves to warmer regions or radically changes his diet for the rest of his life. Aristotle nowhere suggests that the material nature and the differences of the more and the less in the material nature that produce such individual differences in human natural character are permanently “fixed” in that way. Although, of course, it is worth noting that the intellectual traits to which this material nature gives rise seem to be more robust than personality traits such as courage and cowardice. The former traits depend on the softness or hardness of the sense organs, which will be difficult to change (much) after these organs have fully developed, whereas the latter depend on the body's internal heat, which is easy to adjust, especially for short periods of time. The upshot of this is that for Aristotle, an individual's natural character lacks *intrinsic* stability in one direction over another and is thus changeable, for shorter or longer periods, by such things as environmental factors.

2.4 *Some Moral Implications of Aristotle's Views about Natural Character*

Aristotle's account of how environmental factors cause regional differences in natural character traits and thereby, in a sense, create deviations from the human ideal entails that, with regard to the development of virtue, some people by nature will be easier to habituate than others. This means that if the lawgiver is to be successful in creating the best kind of political organization, he should choose as the future citizens of his city those who are naturally spirited (but not too spirited) and intelligent, since their material nature is already most fittingly disposed toward the development of virtue. And disregarding individual differences in character traits due to differences in diet, health, and age, Aristotle claims that this “ideal” character profile is

found most among those (predominantly, Greeks) living in well-mixed environments. So what, then, are the natural benefits of this particular character profile for the development of virtue?

First, Aristotle believes that being spirited—that is, being in a condition where the body is easily heated and prepared for action in response to certain perceptions or feelings, such as of pain or disgrace⁵³—is a precondition for the development of the virtue of courage.⁵⁴ In the absence of ethical training, Aristotle believes that “courage out of spirit” is the most natural or common form of courage⁵⁵ found outside the Greek world (*EE* III 1, 1229b27–30; 29–30: καὶ ὄλως ἡ βαρβαρικὴ ἀνδρεία μετὰ θυμοῦ ἐστίν), and, presumably, particularly in the colder regions to its north. However, those lacking in spirit will have difficulties developing the “true” virtue of courage and will instead be prone to cowardice and timidity, and, more generally, to inaction and laziness (cf. Aristotle’s description of bees in *HA* IX 40, 627a31–b1, which become lazier the more they lose their spirit).

Second, spirit appears to engender a kind of desire for self-government and independence (*Pol* VII 7, 1328a6–7): “and to rule and to be free belongs to all people because of this capacity, for spirit is a ruler and is invincible.”⁵⁶ Sparked by insult, it motivates people to revolt against suppressors and tyrants (*Pol* V 10, 1312b25–33, and *Pol* V 11, 1315a27–31). However, if lacking, it qualifies people for the life of a slave (*Pol* VII 10, 1330a25–30):

The people who are going to be the farmers should preferably, if it is necessary for it [i.e., the state] to be ideal, be slaves, taken from those who are neither all from the same nation, nor from those who are spirited (μῆτε θυμοειδῶν), for in that way they will be useful with a view to their work and safe with a view to not

⁵³ *Pr* II 26, 869a4–7; *Pr* XXVII 3; cf. *MA* 8, 701b34–702a21.

⁵⁴ For the role of spirit and its relation to courage, I rely heavily on Heath 2008 (pp. 255–258), which also points out (at p. 258, n. 32) that natural spiritedness is not the same as natural courage.

⁵⁵ The *true* virtue of courage does not just involve actions performed out of spirit (otherwise, wild boars and children could be truly courageous: *EE* III 1, 1229a24–29) but requires the collaboration of spirit in addition to *choice* (*EN* III 8, 116b30–32). Generally speaking, spirit is an affection of the appetitive soul (*DA* II 3, 414b1–3), which always involves a concurrent affection of the body (*DA* I 1, 403a16–19 and b17–19) and forms a source for actions both in humans and animals. For the action to count as courageous, however, spirit must be conjoined with deliberation and not just rashly follow perceptions without listening to reason (*EN* VII 6, 149a29–32; cf. *EE* II 8, 1225a19–22). Courageous men are also spirited, but their actions are not led by passions: they are led by deliberative choice and by the good as an end (*EN* III 8, 116b23–117a9; cf. *Top* IV 5, 125b20–27, and *Rh* II 14, 1390b2–6).

⁵⁶ See Koziak 2000 (pp. 87–88) on what the author calls “martial *thumos*.”

attempting any revolution; the next best is that they be neighboring barbarian people, who resemble the nature just described (βαρβάρους περιοίκους παραπλησίους τοῖς εἰρημένους τὴν φύσιν).

This, then, is what according to Aristotle causes many people in the hot regions of Asia to be by nature the most slavish of all, at least in a political sense (e.g., in contrast with the freedom or *eleutheria* enjoyed by Athenian citizens). They lack spirit and therefore do not seem to mind living under a despotic rule (*Pol* III 14, 1285a19–22):

Because the barbarians are by nature more servile in character (τὸ δουλικώτεροι εἶναι τὰ ἤθη φύσει) than the Greeks, and the people living in Asia more than those in Europe, they endure a despotic rule without being displeased about it (οὐδὲν δυσχεραίνοντες).⁵⁷

Note that although Aristotle here expresses the belief that all barbarians are typically more slavish than Greeks (cf. *Pol* I 1, 1252b1–9), this does not necessarily mean that he thinks that all barbarians are automatically *natural* slaves.⁵⁸ In fact, Aristotle warns his reader twice that nature fails to make this group easily identifiable: see *Pol* I 5, 1254b15–34, which warns against assuming that a person born a foreigner is automatically a slave, and *Pol* I 6, 1255a28–b2, which warns against assuming that a person with the physique of a worker must have the soul of a slave. Furthermore, in the passage from *Politics* VII 10 quoted above, he appears to treat slaves and barbarians as two separate groups from which to recruit farmers. For Aristotle, being a natural slave depends on having (or lacking) certain natural capacities (I return to this issue below), which may or may not be related *incidentally* to a person's ethnicity. In any case, whatever other characteristics that spirited people living in cold regions do share with natural slaves, Aristotle's practical advice to choose your slaves from among those without spirit at least speaks against using northerners as slaves, or otherwise, perhaps to mix them with slaves from other regions (see *Pol* VII 10, 1330a25–30, quoted above, and *Econ* I 5, 1344b18–19).

And third, Aristotle also stresses the political importance of spiritedness by explaining its role in forming social communities. Spirit is the capacity to form friendship (*Pol* VII 7, 1327b40–1328a5; b40–41: ὁ θυμὸς ἐστὶν ὁ ποιῶν

⁵⁷ Cf. *Pol* V 11, 1313b35–38, where Aristotle describes women and slaves as having “a good time” under the rule of tyrants.

⁵⁸ Cf. Heath 2008 (p. 245, n. 6).

τὸ φιλητικόν), which is necessary for the creation of a political community that is “a community of living well both among households and families, for the sake of a perfect and self-sufficient life” (*Pol* III 9, 1280b33–35). Such communal living is “the product of friendship,” according to Aristotle, “for friendship is the deliberate choice for social living” (*Pol* III 9, 1280b38–39: τὸ δὲ τοιοῦτον φιλίας ἔργον· ἢ γὰρ τοῦ συζῆν προαίρεσις φιλία). It creates mutual bonds between the members of a city, ranging from the affectionate care of mothers toward their children (*EN* VIII 2, 1161b16–27) to the mutual concerns and interests between citizens (i.e., civic friendship; see *EN* VIII 9–10). Too-much spirit can lead to excessive friendship (*Rh* II 12, 1389a35–b5; b4: φιλοῦσι . . . ἄγαν) or even flattery (*EE* III 7, 1233b29–34; cf. *HA* I 1, 488b21–22), whereas too little of it creates enmity or lack of justice, both of which can turn a community into one of master and slaves (cf. *Pol* IV 11, 1295b21–27, and *EN* VIII 11, 1161a30–b10). People with too-much or very little spirit will have more difficulties forming self-sufficient communities.

This difficulty of forming self-sufficient communities is enhanced in those who—in addition to having too-much spirit—are also lacking in natural intelligence, as in the peoples living in cold regions. Because of their earthier and thus less pure material constitution, their sense organs are less calm and soft, which makes it more difficult for them to form accurate perceptions and memories,⁵⁹ and this diminishes their level of experience (*Meta* I 1, 980b25–981a5, and *APo* II 19, 100a3–9), which in turn diminishes their technical intelligence as well as the complexity of their political communities. In animals, Aristotle associates higher levels of intelligence and memory with deeper and longer-lasting relations of friendship, affecting not only parental care (*GA* III 2, 753a7–17; cf. *EE* VII 6, 1240a35–36) but also political ways of life (*HA* VIII 1, 588b27–b5 and 589a1–2). This means that the earthier the material constitution of a given people is, the more their lives will resemble that of wild animals (*EN* VII 5, 1149a9–11): “. . . and foolish people, those who by nature are irrational (ἐκ φύσεως ἀλόγιστοι) and live by their senses alone are like wild animals, such as some classes (γένη) of the distant foreigners.” While having too-much spirit puts these people at a disadvantage with regard to the acquisition of the character virtue of courage, their compromised natural intelligence means that they will also have greater difficulties with the acquisition of the intellectual virtues (which Aristotle characterizes as the virtues belonging to *dianoia* in *EN* II 3, 1103a14–15: διττῆς

⁵⁹ Cf. *Pr* XV 3, 911a1–4: “the only ones who count in fours is a race among the Thracians, on account of their inability to remember more, just as kids, and their not making use of anything large.”

δὴ τῆς ἀρετῆς οὐσης, τῆς μὲν διανοητικῆς τῆς δὲ ἠθικῆς), including practical wisdom, necessary for full virtue. More indirectly, their spirited nature may also compromise their practical intelligence and deliberative capacities:⁶⁰ spiritedness promotes impulsiveness and impatience, which may make it difficult for these people to think things through and to complete a process of deliberation.⁶¹ Their actions will often be emotional and passionate, much like those of young people who “live their lives more by character than by reasoning” (*Rh* II 12, 1389a33–34; cf. Aristotle’s remark about those “young in character” in *EN* I 4, 1095a6–8) and will therefore not be conducive to the development of virtue.

People living in hot regions, on the contrary, are naturally intelligent but are not necessarily better off with regard to the development of virtue. On the one hand, their material nature—which is more watery and purer—allows them to form very subtle and accurate perceptions and memories, from which they develop technical skill. And, to the extent that intelligence depends on the exercise of discriminative perceptual capacities, they also become more intelligent generally speaking: they will have no difficulties generating the universals that can be grasped and analyzed by the intellect and that are involved in scientific knowledge.⁶² They thus possess the intellectual capacities necessary for the formation of complex political organizations and deep bonds of friendship. On the other hand, because of their lack of spirit, such organizations and friendships will never be realized in actuality; people with cold dispositions simply lack the prerequisite emotions and feelings to do this. Their lack of spirit thus keeps them from benefiting from their intelligence:⁶³ without spirit, their lives are inactive and idle, but with some external admonition, which can be provided through the rule of others, they can accomplish extraordinarily complex tasks. In addition, their lack of spirit also compromises their practical intelligence, since they are naturally prone to deliberate without end, which again results in inaction.

⁶⁰ I borrow these points about the influence of spirit on thinking and practical deliberation from Heath 2008 (pp. 257–258).

⁶¹ *Pol* V 10, 1312b25–34; cf. perhaps Aristotle’s account of weakness of will due to recklessness in *EN* VII 7, 1150b19–28, and *MM* II 6, 1203b1–5.

⁶² According to *Pr* XIV 15, 910a26–37, people differ in theoretical wisdom in terms of how much knowledge they have been able to gather in a lifetime or over several generations, and people living in hot regions are more inquisitive than those in cold regions (and live longer, which gives them more time to collect knowledge: see *De Long* 1, 465a9–10).

⁶³ The reason they can still excel in technical skill is perhaps that many crafts already specify the means to the end (*EN* III 3, 112a34–b9, and *EN* VI 5, 1140a28–30; see Reeve 2006, pp. 206–207) and rely more on experience than on deliberation (cf. perhaps also *Ph* II 8, 199b26–33).

In sum, environmental factors have quite dramatic impacts on the individual natural character of people and thereby on their political and moral lives. Living a happy or virtuous life constitutes the perfection of human nature, but, evidently, realizing this kind of perfection is easier for some than for others, and easiest for those—typically, Greek—men who are by nature already disposed to courage and intelligence. One more question that thus needs to be addressed is exactly where this leaves the young barbarian male with the “one-sided nature,” who is unlikely to be selected for citizenship in an ideal city.

As I suggested earlier, it may well seem that for Aristotle all barbarians are natural slaves, but there is at least one reason why this is unlikely to be true for *most* barbarians (i.e., natural slaves are probably barbarians, but barbarians are not necessarily or automatically natural slaves).⁶⁴ Aristotle picks out as essential features of the natural slave (1) his capacity to carry out with his body whatever is necessary for survival, without himself being able to foresee those necessities (*Pol* I 2, 1252a30–34), and (2) his *entire* lack of the capacity to deliberate (*Pol* I 13, 1260a12: ὁ μὲν γὰρ δοῦλος ὅλως οὐκ ἔχει τὸ βουλευτικόν). Natural slaves have a share in reason and are therefore full-fledged members of the human species (*Pol* I 13, 1259b27–28: ὄντων ἀνθρώπων καὶ λόγου κοινωνούντων), but they possess reason only to the extent that they can—passively—apprehend reason (see *Pol* I 5, 1254b21–23; animals, on the other hand, cannot apprehend reason and are therefore slaves of their passions). Because of this, natural slaves are *permanently* excluded from happiness: not being able to deliberate means that natural slaves cannot choose their actions⁶⁵ and therefore cannot become fully virtuous or happy. This is, at least, how Aristotle puts it in the following passage (*Pol* III 9, 1280a31–34):

If the city is not only for the sake of life, but more for the sake of living well—
for if it did [exist only for the sake of life], then slaves and other animals could

⁶⁴ A second reason might be that the virtues of character Aristotle believes natural slaves ought to have in order to perform their function well do not fit well with the individual natural character traits he ascribes to people living either in hot or cold regions. A “good” slave ought to be neither too intemperate nor too cowardly: if a slave is “intemperate and cowardly, he will not do what is fitting” (*Pol* I 13, 1260a1–2; cf. 1260a34–36). However, people with hot material constitutions will likely be too intemperate and too rash for this, while those with cold material constitutions will be too timid and cowardly. Compare this with *Econ* I 5, 1344b12–15: “The kinds [of slaves] that would be the best with a view to work are neither too cowardly nor too courageous. For both [those kinds] do wrong: those who are too cowardly are not enduring and those who are spirited are not easy to govern.”

⁶⁵ Cf. *EE* II 10, 1226b21–30 (21–22: “therefore choice is not present in all other animals, nor in a human of every age, nor in a human of every condition”).

have a city; but in fact they cannot because they do not participate in happiness (διὰ τὸ μὴ μετέχειν εὐδαιμονίας) or in the life in accordance with choice . . .

Now, the fact that natural slaves are excluded from ever achieving full virtue and happiness points to an important difference between them and barbarians. Whereas natural slaves cannot function as citizens of a city (they cannot be led to moral virtue at all), barbarians may well be able to, even if achieving this will require more training—and perhaps additional measures regarding such things as diet—from the part of the lawgiver. Aristotle discusses the natural characters of the various people of the world as differing by the more and the less and as presenting *possible* obstacles for the lawgiver in producing the best city, but the natural traits and incapacities of the barbarians need not be *permanent* obstacles. Aristotle recognizes that the powers of habituation and education are not unlimited (see, e.g., *EN* X 9, 1179b4–31; I return to this issue in chapter 5). However, the importance he attributes to physiological and environmental factors in the shaping of natural character suggests that a change of address, diet, or perhaps even of musical preferences⁶⁶ could be enough to change the balance of the blood for longer or shorter periods of time, such that—perhaps if the barbarian is still young enough—the appropriate moral education could then potentially begin and, after a lot of extra effort, possibly even be successful, whether with regard to the production of individual natural virtues or even full virtue. Aristotle may well believe that all barbarians are fit for *political* slavery, but not necessarily that all or even most of them are natural slaves.

On the other hand, even if most barbarians are not natural slaves, it will still be true that (at least, under my proposed interpretation) the majority of them will never or only with difficulty become morally virtuous and happy. Few humans start out with the natural characteristics to make this kind of transition to stable moral dispositions easily or at all. It thus seems appropriate to conclude this chapter with Aristotle's remark toward the end of the *Nicomachean Ethics* that one really just has to be lucky in this regard (*EN* X 9, 1179b21–23):

It is clear that the share of nature [in humans becoming good] is not up to us but is as a result of some divine causes present in those who are truly fortunate (τοῖς ὡς ἀληθῶς εὐτυχέσιν).

⁶⁶ On the role of music in character formation, see *Pol* VIII 5–7 and *Pr* XIX 27–29 and my discussion in chapter 5.

CHAPTER 3 | The Science of Natural Character

3.1 Introduction

In his practical recommendations to lawgivers about the material conditions of the ideal city in the *Politics*, Aristotle suggests that they should select men with a certain combination of natural character traits—namely, natural courage and intelligence—as the first generation of citizens of the ideal city, because these are the men who can be habituated and reach moral virtue most easily. As we saw in the previous two chapters, while Aristotle recognizes many factors that can change a person’s natural character profile for longer or shorter periods of time in the direction of natural virtue (or natural vice, of course), and while he nowhere suggests that men who lack either natural spirit or intelligence cannot be habituated at all, given the difficulty of the process of habituation in general, the success of the lawgiver in producing a virtuous and therefore happy city presumably lies in how well he can identify those men who require very little in terms of individualized regimen to correct imbalances or one-sidedness in their material natures and who are healthy, strong, and inclined toward virtue already by nature.

Aristotle suggests that future lawgivers can find those men by simply “looking at (βλέψας ἐπι)” the distribution of natural character traits and the political constitutions to which these traits naturally give rise among the Greeks and the other nations of the inhabited world (*Pol* VII 7, 1327b20–23). And perhaps he simply meant by this that (“as everyone knows”) only the Athenian men exhibit the appropriate kind of natural character traits for citizenship in ideal cities.¹ However, Aristotle concludes his ethnographical

¹ See, e.g., Pl. *Tim* 24c5–d3, and Euripides *Med* 824–845.

discussion in *Pol VII 7* by making it clear that there is in fact not one population that is without qualification the most suitable for citizenship. Even among the Greek nations, differences of the more and the less can be found among their natural character traits, such that only *some* of them have a well-mixed natural character suitable for moral development, and nothing prevents this combination of good natural character traits on occasion from being present among foreign nations as well. So how, then, is the future lawgiver supposed to solve this practical problem in making his selection of the first generation of men to populate his newly founded city?

There is a similar problem with regard to the identification of natural² slaves. In order for the ideal state to materialize and for the citizens to live in the kinds of free, leisurely conditions that optimize the acquisition (and cultivation) of virtue, the lawgiver will need to recruit a large body of people to perform the labor necessary to sustain the city in its needs.³ Some of them will be free noncitizens, such as resident aliens and foreigners, who will be involved in trade and the more technical crafts such as medicine, but the majority will be slaves, who will be responsible for tasks such as farming, fishing, rowing, and the many “vulgar” manual crafts. Aristotle claims that rulers and natural slaves are “distinguished right from birth” (*Pol I 5*, 1254a23–24: εὐθὺς ἐκ γενετῆς), that there is a psychological distinction between free people and natural slaves (the latter possess the rational part of the soul as all humans do, but this part lacks the deliberative capacity: *Pol I 5*, 1254b22–23, and *Pol I 13*, 1260a10–12), and that nature tends to produce bodily differences between natural slaves and free people, making the bodies of slaves strong and the bodies of free people upright and useless for manual labor,⁴ such that identifying slaves should be easy. However, he

² It is not clear that when Aristotle discusses slavery outside *Politics I* that he has in mind *natural* slavery, but on the basis of his discussions in *Politics I 4–7*, the question of how to identify the *natural* slave is the most pressing: natural slave and master are supposed to form a naturally complementary pair that is needed for biological preservation (*Pol I 2*, 1252a30–34) and whose natural relationship is beneficial to both, whereas Aristotle sees it as a harm to use people in either role who are not naturally suited for it (*Pol I 5* 1254b6–25). See also Pellegrin 2013 (pp. 93–97, 102–105).

³ See, e.g., *Pol III 4*, 1277a27–b7; *Pol III 5*, 1277b33–7; *Pol VII 9*, 1328b33–1329a2; and *Pol VIII 2*, 1337b8–15.

⁴ See *Pol I 5*, 1254b26–39: “Nature, then, tends to make also the bodies of slaves and of free people different (βούλεται μὲν οὖν ἡ φύσις καὶ τὰ σώματα διαφέροντα ποιεῖν τὰ τῶν ἐλευθέρων καὶ τῶν δούλων); the former strong enough to be used for necessities, and the latter upright in posture (τὰ δ’ ὀρθὰ) and useless for those kinds of tasks, but useful for a political life . . . but often also the opposite happens: some have the bodies of free men; other, the souls. This much, at least, is evident: that if people were born whose bodies alone were as excellent as those found in the statues of the gods, everyone would say that those who were substandard

immediately goes on to problematize this by saying that often the opposite happens as well and that it is not easy to “to see the beauty of the soul.” In a different passage, Aristotle tells us what traits he believes are ideal for those to be recruited as farmworkers—that is, they should be slaves, should not be “from the same stock,” and should not be spirited—but he also differentiates them from the general category of foreigners,⁵ and there appears to be no geographical area that is naturally productive of the character traits that are most befitting for a (natural) slave.⁶

In other words, the success of the lawgiver in creating the kind of city that produces virtue and happiness of its citizens depends in part on how well the lawgiver can select his “raw materials” (cf. *Pol* VII 4, 1325b39–1326a5) both for the body of citizens and the slave population. Aristotle does not offer any further practical advice for how the future lawgiver should go about this selection process in the *Politics*, but his reliance on characterological stereotypes in combination with an appeal to empirical evidence when discussing the identification of citizens and slaves plays with the suggestion that somehow natural character or natural slavery is “visible” and that lawgivers can identify men with well-mixed natural character profiles or natural slaves somehow by looking at them.⁷ This idea (namely, that natural character can be inferred from outward bodily features such as facial features and voice and gait) is central to the ancient practice of physiognomy—a practice Aristotle was very familiar with and that surfaces explicitly in his own corpus as well.

deserved to be their slaves. And if this is true of the body, it is even more justifiable to make such a distinction with regard to the soul, but it is not equally easy to see the beauty of the soul as [it is to see the beauty] of the body” (ἀλλ’ οὐχ ὁμοίως ῥάδιον ἰδεῖν τὸ τε τῆς ψυχῆς κάλλος καὶ τὸ τοῦ σώματος). Cf. *Rh* I 5, 1260b21–22 and 1261a1–3, where Aristotle describes free men as possessing bodily virtues such as beauty, health, strength, and a tall stature.

⁵ *Pol* VII 10, 1330a25–30: “The people who are going to be the farmers should preferably, if it is necessary for it [i.e., the state] to be ideal, be slaves, taken neither from those who are all from the same stock, nor from those who are spirited (μήτε θυμοειδῶν), for in that way they will be useful with a view to their work and safe with a view to not attempting any revolution; the next best is that they be neighboring barbarian people, who resemble the nature just described” (βαρβάρους περιόικους παραπλησίους τοῖς εἰρημένους τὴν φύσιν).

⁶ *Pol* I 13, 1260a1–2 and 1260a34–36: the natural slave should have character virtues too, and these include at least temperance; see also *Econ* I 5, 1344b12–15.

⁷ Cf. *Pol* VII 7, 1328a16–21: “About those who are to participate in politics, how many there should be and what should be the qualities of their nature, and in addition how much land there should be and of what quality, enough distinctions have been made; for we should not search for the same precision with regard to theoretical discussions and with regard to the things that come through perception” (οὐ γὰρ τὴν αὐτὴν ἀκρίβειαν δεῖ ζητεῖν ἐπὶ τε τῶν λόγων καὶ τῶν γιγνωμένων διὰ τῆς αἰσθήσεως).

In this chapter, I pursue the role of physiognomic thinking in Aristotle not only in order to formulate a possible solution to what seems to be a practical problem in Aristotle's political theory,⁸ but also to make sense of the scattered physiognomic materials in his treatises. Aristotle's views about natural character and its connections to blood, body, and virtue were not developed in a cultural or philosophical vacuum: the question of how to identify naturally good people was important among Aristotle's philosophical predecessors and contemporaries (and remained so in later periods),⁹ and Aristotle's reflections on and references to the "science" of physiognomy should be understood as part of this tradition.

3.2 Aristotle's Familiarity with the Science of Physiognomy

Physiognomy (from the later Greek *physiognōmia*, which is a contraction of the classical form *physiognōmonia*) refers to the ancient science of determining someone's innate, natural character on the basis of their outward—and hence observable—bodily features. The discipline in its technical form with its own specialized practitioners first surfaced in Greece in the fifth century BCE, possibly through connections with the Near East, where bodily signs were taken as indicators of someone's future rather than character. The shift to character perhaps arose from the widespread cultural practice in the ancient Greek and Roman world of treating someone's outward appearance as indicative of a person's personality, which is already visible in Homer (eighth century BCE).¹⁰ The same holds for the practice of attributing character traits associated with a particular animal species to a person on the basis of similarities in their

⁸ Note that this problem disappears if one reads Aristotle's discussions of the best constitution and the material conditions of the ideal city in *Politics* VII–VIII as theoretical exercises in youthful Platonism and as having no direct practical relevance (see, e.g., Kraut 2002, [pp. 192–195] and Miller 2011 [p. 252]). My own views about the practicality of the best city discussed in these books are congenial to Ober 1998 (pp. 339–351), which argues that Aristotle's city of one's prayers was supposed to work as a blueprint for colonists targeting Asia Minor in the 330s, following the Macedonian expansion. I am grateful to Thornton Lockwood for these references.

⁹ See Boys-Stones 2007, which argues that the role of physiognomy in classical philosophy was not so much to influence its developments, but rather to support theories about the relation between body and soul that were developed independently by philosophers; physiognomy was thus used instrumentally in support of philosophical claims.

¹⁰ In the *Iliad*, for instance, a description of Thersites's quarrelsome and repulsive character is followed by a description of his equally ugly body (see *Iliad* 2.211–219), suggesting that this correspondence between body and character is no accident. Thersites is thus the perfect foil for the Greek ideal of the *kaloskagathos*—the man who is both beautiful on the outside and good on the inside.

physique: this practice was first formalized in physiognomy but was already widely used in a nontechnical way in ancient literature.¹¹ Within the philosophical tradition, the “science” is traditionally traced back to Pythagoras, who allegedly applied it to his prospective students as a means to diagnose their character traits and intelligence before admitting them to his school,¹² although Galen prefers to credit “the divine Hippocrates” as its originator,¹³ referring to the clear links between physiognomy and the humoral theories and sign interpretations prevalent in ancient Hippocratic medicine.¹⁴

Physiognomy is first treated systematically in a handbook from the third century BCE, the *Physiognomics*, which consists of two parts—each presumably written by a different Peripatetic author—and is spuriously ascribed to Aristotle.¹⁵ The handbook describes physiognomy as a science that postulates a “sympathetic” correspondence between a person’s body and soul, such that affections of the one simultaneously change the other. Given this correspondence, the authors argue that one is then justified in drawing inferences from observations of certain bodily or facial features in a person—that is, from the so-called physiognomic signs to the (invisible) presence of the corresponding psychological states or character traits in that person. These physiognomic signs are themselves derived in one or more of the following ways: first, in what is purportedly the oldest physiognomic method, practitioners of *animal physiognomy* rely on parallels between the human body and that of animals (e.g., a person who looks like a bull is said to have the spirited character of a bull). Second, physiognomists of the *ethnological* kind rely on parallels between the person being physiognomized and the physical characteristics of human ethnic groups (e.g., a person who possesses red hair like

¹¹ The most famous example of the latter is perhaps Semonides of Amorgos’ satire of women (fragment 7 *On Women*; seventh century BCE), which profiles ten different “women types,” mostly by reference to their similarities to animal species: thus, one woman type is filthy and fat as the sow; another is charmless, sex crazed, and criminal as the weasel; and yet another is deformed and shameless as the ape. Only the bee woman stands out positively for her modesty and industriousness.

¹² See Aulus Gellius *Noct Att* I 9; Hippolytus *Refut Haeres* I 2; and Porphyry *Vit Pythag* 13.

¹³ See Galen *QAM* 797–798. On the origins of physiognomy and its relation to diagnostics and ancient medicine, see Evans 1969 (pp. 5 and 17–28) and Tsouna 1998 (pp. 177 and 181).

¹⁴ In the *Epidemics*, for instance, the Hippocratic author mentions several bodily signs from which character can be inferred: according to 2.6.1 (5.132 Littré), a big head with small eyes indicates quickness to anger; for other signs, see 2.5.1, 16, and 23 (5.128, 130, and 132 Littré); 2.6.14 and 19 (5.136 Littré); and 6.4.19 (5.312 Littré).

¹⁵ The treatise is edited in Förster 1994 (reprint from 1893), pp. 1–91. For a discussion, see Evans 1969 (pp. 6–17).

the Scythians must also be rash and quick to anger like the Scythians). And third, physiognomists of the *pathological* kind rely on parallels between that person and the physical characteristics of people undergoing strong emotions or passions (e.g., a person with a permanent snarling grin on his face must have a surly character).

There is no doubt that Aristotle was familiar with the discipline and its methods. For instance, in the midst of explaining how monstrosities occasionally come about during embryogenesis in his *Generation of Animals*, Aristotle refers to “a certain physiognomist” (φυσιογνώμων . . . τις) who “reduced all faces to those of two or three animals” (*GA* IV 3, 769b20–21). More significantly, in the *Prior Analytics*, Aristotle includes a discussion of the validity of physiognomic inferences (*APr* II 27, 70b7–38) as one example of a nondeductive type of reasoning that can be tested by his general syllogistic theory. Having set out his theory of syllogistic, Aristotle is concerned toward the end of his treatise to show that “not only dialectical and demonstrative deductions come about through the aforementioned figures, but also rhetorical ones” (*APr* II 23, 68b8–12), and he discusses physiognomic inferences immediately after his treatment of inferences from signs, of which the former appear to be a subclass.¹⁶ Note that while Aristotle’s discussion here opens the door to a scientific use of the discipline, it is not clear from this discussion alone whether he fully endorses the practice himself: his conditional language in the *Prior Analytics* (“it is possible to physiognomize *if* certain conditions are met”) warrants caution,¹⁷ as does perhaps the claim to originality by the Peripatetic author of the first treatise preserved in the *Physiognomonics*.¹⁸ Further evidence in support of the existence of at least some very basic physiognomic thought in Aristotle,

¹⁶ There is no *explicit* link between the preceding discussion of sign inferences and this physiognomic discussion, but it expresses the same interest in showing the potential validity of a nondeductive type of reasoning—the so-called enthymemes, which yield persuasion rather than truth—that is prevalent in Aristotle’s time, and there is no reason to doubt its authenticity. Pace Smith 1989 (p. 227): “This terminal section, on ‘recognizing natures’ (*physiognōmonein*), seems to have no very close connection with the *Prior Analytics*. It might have been included (or appended by an editor) because this skill also formed part of the orator’s bag of tricks. However, the discussion never refers to the other themes of the *Prior Analytics*. It seems more likely, therefore, that this passage found its place here only because it is concerned with certain physical states as *signs* of states of character.” Cf. also Burnyeat 1982 (p. 203).

¹⁷ See especially *APr* II 27, 70b7: τὸ δὲ φυσιογνωμονεῖν δυνατόν ἐστιν, εἴ τις δίδωσιν . . . ; b11–14: εἰ δὴ . . . δυνήσμεθα φυσιογνωμονεῖν; and b22–26: εἰ τοῖνυν . . . δυνήσμεθα φυσιογνωμονεῖν.

¹⁸ This author claims to use a “philosophical” method of physiognomy that “nobody has ever tried” (*Phgn* 2, 807a4: οὐδεὶς μέντοι ἐπικεχείρηκεν), so while the use of physiognomic inferences as such may well trace back to Aristotle himself, the more sophisticated parts of the

however, comes from his biology: Aristotle explicitly includes physiognomic signs in his list of facts about the parts on the (human) head in the early chapters of his *History of Animals* (I 8–11), and he identifies certain parts as indicative of “the best character” while others are signs of “bad character.”

My aim in the remainder of this chapter is to show that although Aristotle does not develop a systematic physiognomic theory himself, he nevertheless provides the scientific groundwork for such a theory and also uses—if sparsely—rudimentary physiognomic methods and assumptions in his biology and moral psychology. For Aristotle, having a well-mixed natural character profile that puts one in the direction of virtue might well be something that is reflected in the way one looks, walks, and speaks, and future lawgivers could therefore benefit from knowing the relevant signs. I will first, in section 3.3, discuss Aristotle’s theory of the science of physiognomy as it appears in the *Prior Analytics* and then, in section 3.4, show that Aristotle endorses the kind of sympathetic physiology of body and soul that is required for physiognomic inferences, and offer evidence for his reliance on this “science of character” in his biological writings.

3.3 *Physiognomy in Aristotle’s Prior Analytics*

The main method of reasoning used in physiognomy is induction: once the physiognomic signs of the human body have been identified, the corresponding character traits can simply be inferred. It is therefore fitting that Aristotle brings up the question of the logical validity of such physiognomic inferences in the context of a broader discussion of the validity of nondeductive inferences in the last five chapters of his *Prior Analytics*. His treatment of physiognomy forms the conclusion of this discussion and should also be understood in that context.

Aristotle introduces his discussion of nondeductive inferences as follows (*APr* II 23, 68b9–14):

We must now state that not only dialectical and demonstrative deductions (συλλογισμοί) come to be through the aforementioned figures, but also rhetorical ones and, in general, whichever persuasive argument,¹⁹ whatever its

Peripatetic physiognomic method probably do not. See Tsouna 1998 (p. 178, n. 14); pace Evans 1969 (p. 8).

¹⁹ I follow Burnyeat in reading πίστις here as referring not to whichever form of conviction but rather to any form of *reasoned* conviction; see Burnyeat 1982 (p. 200, n. 20).

method. For we become convinced in all cases either through deduction or from induction (ἐξ ἐπαγωγῆς).

The purpose of introducing these other types of reasoning here is thus to show that their logical validity too depends on whether or not they can be resolved into the previously established syllogistic figures,²⁰ and Aristotle even characterizes inductions as “deductions through induction” (*Apr* II 23, 68b15–16: ὁ ἐξ ἐπαγωγῆς συλλογισμὸς) in an attempt to assimilate all types of reasoning to these syllogistic figures.²¹

In *Apr* II 23, 68b15–17, Aristotle defines this type of “deduction through induction” as the inference that one extreme—namely, the predicative term (*A*)—belongs to the middle term (*B*), through the other extreme—namely, the subject term (*C*). In “regular” deductions (such as demonstrative syllogisms), the predicative term (*A*) is demonstrated to hold of the subject term (*C*) through the middle term (*B*): *AaC* then follows necessarily from *AaB* and *BaC* taken as premises (*AaB*, *BaC*, therefore *AaC*). However, in these “deductions through induction,” the predicative term (*A*) can according to Aristotle convincingly (rather than necessarily) be shown to hold of the middle term (*B*) via the predicative term (*C*), in virtue of both *A* and *B* being able to be predicated of *C* and in virtue of *BaC* being convertible to *CaB*. Aristotle offers the following example (*Apr* II 23, 68b17–29): one can show convincingly that “living long” (*A*) holds of “everything that is without bile” (*B*), by observing that both “living long” (*A*) and “being without bile” (*B*) belong to “all the particular kinds of long-living animals” (*C*). This reasoning is valid if *C* is convertible with *B* and if the extension of *B* is not wider than *C*:²² this yields a syllogism in the first figure (*AaC*, *BaC* = *CaB*, and from this *AaB* convincingly follows). Aristotle characterizes this kind of reasoning as being “clearer to us,” presumably because we “show” there to be a connection between two attributes on the grounds that both are observed to belong to *the same collection of particular subjects*.

Aristotle discusses three other types of nondeductive reasoning in the next chapters (inferences from example in *Apr* II 24, reductions in *Apr* II 25, and objections in *Apr* II 26) before turning to inferences from probabilities and

²⁰ Burnyeat 1982 (pp. 195 and 200) and Smith 1989 (p. 219).

²¹ Smith 1989 (p. 220).

²² That is, there cannot be any other kinds of animal that are without bile but not mentioned under *C*, for in that case there could be animals that do not live long even though they are without bile; *A* and *B*, on the other hand, do not need to convert: there might well be kinds of animals that live long due to other features rather than due to them being without bile.

signs in *APr* II 27. Physiognomic inferences are discussed at the very end of this chapter (*APr* II 27, 70b7–38). As was the case in the previous chapters, Aristotle’s aim here is to show how this particular type of inference can be valid. He formulates four conditions that need to be met in order for it to be possible to draw physiognomic inferences and for them to be drawn validly.

The first condition that Aristotle mentions for physiognomy to be possible is that the body and soul must be changed simultaneously (ἅμα μεταβάλλειν) by *natural* affections (*APr* II 27, 70b7–9; Aristotle emphasizes that these affections must be caused by natural motions and not by learning; *APr* II 27, 70b9–11). This is an ontological condition: for physiognomic signs to be true, certain parts of reality—namely, body and soul—must be structured in a certain “sympathetic” way by nature such that they change together. Aristotle does not provide any further details about this special kind of body-soul relation, but the Peripatetic authors of the *Physiognomy* perhaps offer some more insight: according to them, this *sympatheia* (*Phgn* 4, 808b11: συμπαθεῖν; 808b19: συμπαθηῖ) between body and soul entails not only an ontological interdependence of the two, which explains why natural affections of the one *simultaneously* cause alterations of the other, but also some kind of “natural unity” between the two, which explains why specific body types always go together with their *own appropriate* character types and vice versa.²³

Aristotle combines his formulation of the second and third condition (*APr* II 27, 70b11–14): he states that there must *exist* one distinctive or proper sign (τὸ ἴδιον) for each affection (again an ontological requirement) and that it must be possible to *grasp* (λαμβάνειν) these distinctive signs for each affection (an epistemological requirement). Assuming that there exists one distinctive bodily sign for each affection of the soul or for each character trait, we need a method for learning to identify the relevant signs and for being able to tell which affection or trait they are a sign of. Aristotle clarifies this statement with an example from animal physiognomy (a method he was certainly familiar with: see again *GA* IV 3, 769b20–21). Let us suppose, he says, that the distinctive sign for courage in lions is having large extremities,²⁴ where the sign is distinctive because it belongs only to the species of

²³ See *Phgn* 1, 805a1–17, and *Phgn* 4, 808b11–30.

²⁴ Note that the example appears to be entirely Aristotelian: in the *History of Animals*, Aristotle also singles out the lion as the primary example of an animal that is courageous (*HA* I 1, 488b16–17: “others are free spirited and courageous and high bred, such as the lion”), and he records his observed correlation between the largeness of the body of one kind of lion with it being more courageous (*HA* IX 44, 629b33–35: “And there are two kinds of lion. Of the two the one that is more compact and has curlier hair is more cowardly, whereas the one that is larger—μακρότερον—and has straighter hair is more courageous”). The author of the first

lions as a whole. However, the bodily feature of having large extremities may also belong to individuals of other animal kinds, such as a human being (note that it cannot belong to that second animal kind as a whole; otherwise the sign would no longer be distinctive for the first kind),²⁵ in which case the corresponding character trait, courage, will also be present in those individuals. Thus, for physiognomy to be possible, one first needs to be able to collect all distinctive signs from animals that have a particular, distinctive character trait. The case gets more complicated when an animal kind as a whole has *two* distinctive affections, such as lions being both courageous and generous. As Aristotle points out, how can we know which bodily feature is the sign for which character trait (*APr* II 27, 70b27–28)? The solution to this problem is to search for other individual animals to which one of the two character traits—but not the other—belongs, and to see what distinctive bodily feature(s) they have (*APr* II 27, 70b26–32). For instance, if a man is brave but not generous, and he has long extremities, long extremities must evidently (b30: δῆλον) be a sign of braveness, but if he has some other distinctive bodily feature, long extremities must be a sign of generosity.²⁶

The fourth condition pertains more specifically to the logical validity of physiognomic inferences. Aristotle states that (*APr* II 27, 70b32–34):

It is possible to physiognomize in the first figure when the middle term [B] converts with the first extreme [A] but extends wider than and does not convert with the third extreme [C].

Earlier in the chapter (*APr* II 27, 70a29–30), Aristotle had already explained why the inference has to be drawn in the *first* figure: only the use of the first

treatise preserved in the *Physiognomonics* also identifies large and strong extremities as a sign of courage (*Phgn* I 3, 807a31–33: Ανδρείου σημεία . . . καὶ τὰ ἀκρωτήρια τοῦ σώματος ἰσχυρὰ καὶ μεγάλα).

²⁵ This is my loose paraphrase of *APr* II 27, 70b17–19: ὁ καὶ ἄλλοις ὑπάρχειν γένεσι μὴ ὅλοις ἐνδέχεται. τὸ γὰρ σημεῖον οὕτως ἰδίον ἐστίν, ὅτι ὅλου γένους ἰδίον ἐστὶ [πάθος], καὶ οὐ μόνου ἰδίου. Aristotle specifies that a sign is distinctive in *this way*, which refers back to the way just described in b17–18; that is, that a sign can belong to other kinds but not to those kinds as a whole, and he then explains why: signs are distinctive in this way *because* (I thus read ὅτι in b19 as causative, as does Jenkinson 1949, ad 70b19) affections are distinctive of an entire kind and do not belong uniquely to one kind. I see no reason to excise πάθος in b19 from the text, as Ross 1949 (ad 70b19) proposes.

²⁶ Note that Aristotle does not raise the deeper epistemological question about whether we can in fact know the characterological contents of the souls or minds of others: it is simply taken for granted that one can, as is the related ontological presupposition that souls/minds have content or exist at all. On this issue, see Tsouna 1998: apparently, the ancients rarely expressed doubts about other minds.

figure gives rise to valid inferences from signs and to arguments that count as evidence in those cases in which the signs are in fact universally true.²⁷ The following lion example, in its formalized form, is used to illustrate the two further requirements (*APr* II 27, 70a29–38):

A belongs to all B [and: B belongs to all A]
 courage *belongs to all that has* large extremities [and: *vice versa*]

B belongs to all C [and: B belongs to some D]
 having large extremities *belongs to all* lions [and: *to some* humans]

A belongs to all C
 courage *belongs to all* lions [and: *to some* humans]

First, concerning the minor premise, which is of the form “B belongs to all C” and where B picks out the physiognomic sign and C picks out the animal species from which the sign is taken, Aristotle holds that while the sign picked out must belong to the *whole* animal species, its scope must also extend to *some other animals*, although not to that other animal species as a whole. If the terms were to be convertible (for instance, if all animals with large extremities were lions), the sign would be a *unique* sign for that species and could not be used to draw inferences about the presence of its concomitant affection in other animals. Second, regarding the major premise, which is of the form “A belongs to all B,” where A picks out the character trait for which the sign (B) is indicative, Aristotle explains that the sign must belong to *all* animals that are courageous and, conversely, that all animals that are courageous must have the concomitant sign; otherwise, there would not be one sign for one character trait. If, then, the physiognomic sign picked out is true, one can infer from the presence of long extremities in a person that he is courageous. With this conclusion, Aristotle’s discussion of physiognomic inferences, and the treatise as a whole, ends.

There is no evidence that Aristotle systematically endorsed this particular type of zoological physiognomy,²⁸ even though his biology allows for the

²⁷ Cf. *SE* 5, 167b8–13. See also *Rh* II 24, 1401b9–14, where Aristotle gives two examples of inferences from signs that do *not* yield a (valid) syllogism (ἀσπυλλόγιστον), the first of which is an inference from signs in the third figure (“for instance, someone might say that lovers are useful to their cities, since the love of Harmodius and Aristogeiton caused the downfall of the tyrant Hipparchus”) and the second one is an inference from signs in the second figure (“or, someone might say that Dionysius is a thief: for he is vicious. For there no deduction here: for not every vicious man is a thief, although every thief is a vicious man”).

²⁸ The relevant kind of association of the zoological method with ethnographical stereotypes can, however, be found in the *Physiognomy*, where the author states that the signs of soft hair

coming to be of humans with heads or faces resembling those of animals,²⁹ and even though he may well have used this method himself at least occasionally.³⁰ However, as will become clear below, his natural philosophy satisfies the requirements for physiognomy as spelled out in this chapter of the *Prior Analytics*: that is, Aristotle believes that body and soul change together due to natural motions, and that there exist physiognomic signs and that they can be known. In addition, Aristotle developed his own method of physiognomy that is more mathematical in nature and appears to be related to his doctrine of the mean.

3.4 *Physiognomy in Aristotle's Biological Treatises*

Body and soul “changing together”

The first ontological condition for the possibility of physiognomy that Aristotle identifies in the *Prior Analytics* is the existence of a sympathetic causal relationship between body and soul, because of which the two change simultaneously (*APr* II 27, 70b7–8: ἅμα μεταβάλλειν) when one is affected by natural motions. Aristotle does not confirm whether he himself believes that physiognomy is possible in that context, but his hylomorphic psychology fits this causal model and therefore at least makes physiognomy a practicable scientific enterprise.³¹ Specifically, the affections of the perceptive part of the soul to which the capacities for natural character belong³² are common to body and soul in a way that makes it impossible to separate even in account

indicating cowardice and coarse hair indicating courage are taken from animals, but that the *very same* signs also belong to different peoples, since “the inhabitants of the north are brave and coarse haired, while southern peoples are cowardly and soft haired” (*Phgn* 2, 806b7–20).

²⁹ Apparently, this can happen “even when there is no deformation” (*GA* IV 3, 769b10–25; b17–18: ἀλλ’ ἐοικότα μόνον—ὅπερ γίγνεται καὶ μὴ πεπηρωμένων). In this passage, which occurs in the context of a discussion of monsters, Aristotle denies that humans or other animals can come to be with the actual head of another kind of living being, but he endorses the view that they can resemble each other and even seems to leave open the possibility that those resemblances come to be due to natural causes. Note that Aristotle believes that the opposite—animals with faces resembling human ones—can happen too: see *HA* II 3, 501a29 (πρόσωπον δὲ καὶ ὧτα ἀνθρωποειδές) and *HA* II 8, 502a27–34 (a27–28: τὸ δὲ πρόσωπον ἔχει πολλὰς ὁμοιότητας τῷ τοῦ ἀνθρώπου).

³⁰ See my discussion of *GA* IV 5, 774a37–b2 below in section 3.4.

³¹ Boys-Stones 2007.

³² I will defend the attribution of natural character traits to the perceptive part of the soul in chapter 5.

the psychological from the physical.³³ Accordingly, we saw in the previous chapters that changes in factors such as the external climate in which one lives or the diet one consumes can produce differences of the more and the less in the species-specific blend of one's blood and the level of internal heat one possesses, and those changes produce—at the same time—differences of the more and the less in the species-specific natural character profile one has. For instance, the consumption of wine increases the level of internal heat and thereby, at the same time, the level of spiritedness of the person in question. These changes in natural character are for the most part temporary and disappear once the effects of those climatic changes or the ingested foodstuffs wear off.

Seasonal and dietary changes produce differences not only of the more and the less in blood and internal heat, but also, as would be required for the science of physiognomy to be possible, in some of the outward, visible parts of animals. According to Aristotle, these visible changes occur in a very specific group of natural attributes of animals; namely, those *pathêmata* “by which the parts of animals differ,” such as differences in eye color, hair structure, and pitch of voice. Aristotle discusses these attributes in *Generation of Animals* V and characterizes them (1) as coming to be due to changes occurring during the development of the animal *after* its birth, (2) as diverse rather than realized uniformly across species, and (3) as being the most visible or prominent in human beings (*GA* V 1, 778a16–28). Aristotle also points out that many of the changes in these attributes happen *simultaneously* with the changes in the internal heat of the animal (*GA* V 4, 784b31: τὰ πάθη συμμεταβάλλουσιν; cf. also *GA* V 2, 781a30–34), due either to changes in the external temperature of the environment of the animal³⁴ or to diseases.³⁵ Interestingly, these kinds of affections in face and voice—although not explicitly identified as such in this particular context—are also all stock examples in physiognomic contexts.³⁶

Note that the expression “changing together” that Aristotle uses here and in his discussion of the possibility of physiognomy in the *Prior Analytics* is a technical one: at least in the *Posterior Analytics*, it picks out a particular

³³ See Charles 2009b and Charles 2011a.

³⁴ For examples, see *GA* V 2, 781a33–34; *GA* V 3, 782b32–783a1; *GA* V 3, 783a11–32; *GA* V 3, 784a12–20; *GA* V 4, 784b26–32; *GA* V 6, 786a30–34; and *GA* V 7, 788a16–20.

³⁵ See, e.g., *GA* V 1, 780a14–21, and *GA* V 4, 784a25–30.

³⁶ See, e.g., *Phgn* 2, 806a26–34 for a “complete” list of parts from which physiognomic signs are drawn, which includes color of parts such as eyes and hair, and differences in pitch of voice.

type of natural process that needs to be incorporated into the syllogistic system of demonstration. Formally, demonstrations of timeless states of affairs are the same as demonstrations of processes, but in the latter the terms get tensed: the terms pick out past, current, or future events that stand in a certain time relation to each other. In *Posterior Analytics* II 12, Aristotle analyzes three scenarios of the relationship between “cause” (picked out by the middle term *B*) and the “effect” (represented by *A*’s coming to hold of *C* in the syllogism) in natural processes. The first of these is the scenario in which the cause and effect occur *simultaneously* (*APo* II 12, 95a10–24; a22: τὸ μὲν οὖν οὕτως αἴτιον καὶ οὐ αἴτιον ἅμα γίνεται).³⁷ In these cases, the natural processes picked out by the major term come to hold of a certain subject *at the same time* as and *to the same degree* as the states of affairs picked out by the middle term come to be,³⁸ exactly as Aristotle stated in the *Prior Analytics* was required with regard to changes concerning body and soul for physiognomy to be possible.

Physiognomic signs in Aristotle’s biology

Aristotle’s natural treatises are full of inferences from signs, where the sign is some observable state of affairs or some otherwise known fact that is used to draw inferences about some other unobservable or not yet known state of affairs.³⁹ Many of these involve visible bodily features of living beings that are taken as evidence for the existence of internal, invisible conditions. And most of these signs are “medical” in nature: they are outward, bodily affections that indicate that within the animal a certain physiological change has taken place, mostly pertaining to animals having reached sexual maturity,⁴⁰ to females having conceived offspring,⁴¹ or to animals having become diseased.⁴² Similarly, certain kinds of behaviors or actions performed by living

³⁷ The other two are scenarios in which the cause and effect occur *consecutively* (*APo* II 12, 95a24–95b1, and *APo* II 12, 95b13–b37), and cases in which cause and effect follow each other in a *continuous cycle* (*APo* II 12, 95b38–96a7).

³⁸ For example, “eclipsing” of the moon happens simultaneously with the earth moving in the middle between the sun and the moon; solidification of water (or the coming to be of ice) happens simultaneously with the complete cessation of heat. For the examples, see *APo* II 12, 95a14–24.

³⁹ This use is especially common in the *Meteorology*; see Freeland 1990.

⁴⁰ See, e.g., *HA* V 14, 544b22–545a14; *HA* VI 18, 572b32–573a3; and *HA* VI 20, 574b14–18.

⁴¹ See, e.g., *HA* VII 3, 583a14–15.

⁴² *HA* VIII 22–25, *passim*; cf. *Meta* IV 2, 1003a34–b1, on signs of health.

beings are sometimes interpreted as signs by Aristotle for the existence of certain underlying character traits.⁴³

The biological works also list a number of signs that are physiognomic in nature. For instance, in his *Generation of Animals*, Aristotle characterizes hairiness in humans as a sign for lustfulness, while borrowing—in what looks like an application of the zoological method of physiognomy—the sign itself from hares (*GA* IV 5, 774a37–b2):

This is shown by its [i.e., the hare’s] hairiness, for it has an excessive amount of hair; indeed, it has hair under the feet and inside the jaws, and it is the only animal that does so. This hairiness is a sign (σημείον) that it has a large amount of residue, and for this same reason, too, those among men who are hairy are more lustful and have more semen than those who are smooth.

In a later discussion, Aristotle differentiates between three types of voice (one deep, one high pitched, and one well pitched, with the latter being characterized as being “proportionate between the [two] extremes”) and claims that a deeper tone of voice is held to belong to those with a nobler nature (*GA* V 7, 786b34–787a2; καὶ δοκεῖ γενναιοτέρας εἶναι φύσεως ἢ βαρυφωνία). Aristotle does not offer any source for this particular sign but instead points out a parallel with melodies: in melodies, too, Aristotle claims that what is deep pitched is better than the high pitched, “since deepness is a form of superiority” (*GA* V 7, 787a1–2).

For the clearest appeals to physiognomic theory present in Aristotle’s natural treatises, we need to turn to the opening book of his *History of Animals*.⁴⁴ Starting in *HA* I 6, Aristotle provides an overview of facts about the animal parts, starting with those that can be found on the head. For this, he uses the *human* head as a guideline in order to determine what parts ought to be discussed and in what order. Aristotle brings up physiognomic signs in this context because he considers them to be part of a group of differentiae belonging to humans that are the first visible and noticeable, and he treats them as facts about humans amid other biological facts. Let me specify these claims.

⁴³ *HA* IX 4, 611a1–14; *HA* IX 48, 631a8–9; *Cael* II 5, 287b28–31; *EN* II 3, 1104b3–5; *Rh* I 9, 1366b25–31; and *Rh* II 6, 1384a2–8.

⁴⁴ Boys-Stones 2007 (p. 44) also identifies *HA* VI 18, 572a8–13 (where Aristotle mentions that the name for sexually uninhibited women is derived from the behavior of female horses that go “a-horsing”) as a physiognomic passage, but I think that the evidence there is implicit at best.

First, as has been argued in recent scholarship on this treatise,⁴⁵ the primary goal of the *History of Animals* is to collect and organize data about animals, and in particular their attributes and differentiae (i.e., their differences with respect to the animals' modes of life, their activities, their characters, and their parts). The organization of the treatise itself is supposed to lay out their correlations, which are discovered through observation and division, and thereby to prepare for the possibility of providing causal explanations at a later stage. This is also roughly how Aristotle presents the purpose of this treatise in a methodological statement in the first book (*HA* I 6, 491a7–13):

These things, then, have been put forward in outline, to provide a foretaste of what things we have to investigate and what it is about them [that we have to investigate]. Later we shall discuss them in greater detail, in order that we may first grasp the differences and the attributes belonging to all. After this, we must try to discover the causal explanations of these things. For it is the natural method to do this after having started with the investigation of the details concerning each thing; for from these it becomes apparent both about which things the *demonstration* (τὴν ἀπόδειξιν) must be, and from what things it must proceed.⁴⁶

The zoological research program sketched in this passage recommends that the natural scientist start with a collection of the basic facts (the “that” or *hoti* in the language of the *Analytics*) that always or for the most part go together, so that they can be used as the possible terms in the formulation of demonstrations (the “because of which” or *dioti* in the language of the *Analytics*). Although many of these natural scientific “demonstrations” (note that the causal explanations are never presented in the form of Barbara syllogisms) are provided in *methodologically later* biological treatises, such as in the *Parts of Animals* and *Generation of Animals*, it looks as though Aristotle continued to add to and update this collection of data throughout his life.⁴⁷ Aristotle mentions the physiognomic signs without any disclaimers or doubts about their existence, as he sometimes does when quoting verbal reports from others, and he treats them as facts that need to be included in this data collection alongside other facts about parts of animals.

⁴⁵ See especially Lennox 2010a (p. 244, n. 7), Lennox 2001a (p. 7), Lennox 2001a (pp. 39–71), and Lennox 1990 (pp. 175–182).

⁴⁶ See also *PA* II 1, 646a8–12, and *IA* 1, 704b9–10; cf. *APr* I 30, 46a17–27.

⁴⁷ In some cases, the *History of Animals* contains more-updated and more-elaborate data than what can be found as the material for the causal explanations in the other natural treatises.

Second, the physiognomic material occurs in the midst of a presentation of the collected differences of the parts of animals that is guided explicitly by a focus on the human body. The differences between parts are mentioned frequently in the first couple of chapters⁴⁸ leading up to the methodological and transitional passage in *HA I 6* quoted above, but it is only after this that Aristotle starts his more systematic task of collecting all the parts of animals as the first of the differentiae that need to be covered. As a justification for this, Aristotle states that “animals differ *foremost* and *first* from each other with regard to these,” meaning that parts are the most important differentia of animals (*HA I 6*, 491a14–16). He continues by claiming that, in order to preserve the proper, natural order of exposition, he will start by enumerating the parts on the *human* body, since they are epistemologically speaking “closer to us” and visible to everyone (*HA I 6*, 491a16–26). He then proceeds by discussing the facts about the nonuniform parts that are visible on the human body and that are common both to male and female (*HA I 7–16*; see especially *HA I 15*, 494a19, and *HA I 16*, 494b18–21), while moving from the parts on the head to the bottom. Within this discussion of the external parts,⁴⁹ the human body continues to serve as a kind of normative roadmap for what parts ought to be discussed and in what order.⁵⁰ Physiognomic signs, since they belong to humans only and are found at the natural top of human bodies (namely, on their faces), are thus among the parts that are “closest to us,” very visible, and among the facts mentioned first.

Aristotle discusses the parts of the face—which he defines as the part of the head below the skull that only humans have⁵¹—in *HA I 8–11*. The chapters provide the following three types of information about those parts. First, Aristotle provides a rough description of the part and its location and structure. Second, he lists the kinds of animals in which these parts differ significantly from the ways they are present in humans or in most other animals. For instance, he mentions the mole as the only viviparous animal without

⁴⁸ See especially *HA I 1*, 486a5, 486a14–16, 486a25–b8, and 486b22–24; *HA I 2*, 488b29–32; *HA I 3*, 489a13–15; and *HA I 5*, 489b19–490b6.

⁴⁹ Cf. *HA I 15*, 494a20–b1, and *HA I 16*, 494b19–20. For the internal parts, Aristotle relies on analogies with animals close to human beings: see *HA I 16*, 494b19–24.

⁵⁰ Aristotle uses the same method of organization following the natural order of the human body in his *Parts of Animals*: see *PA II 10*, 655b28–29, and *PA II 10*, 656a9–13.

⁵¹ Cf. *PA III 1*, 662b18–22, where Aristotle provides an etymological explanation of the word, linking it to “seeing from afar” and “projecting vocal sound forward,” which are activities only humans can perform because they are the only animals that walk upright.

eyes (*HA I 9*, 491b27–34), and the elephant as having an exceptionally long and strong nose (in *HA I 11*, 492b17–21). And third, Aristotle describes the differentiations of the part in question, while noting their correlations with different character traits, identifying the one differentiation that he thinks is functionally best, or both. For instance, Aristotle states that among the various eye colors found in animals, greenish is “a sign of the best character (ῥῆθους βελτίστου σημεῖον) and is strongest with regard to sharpness of vision” (*HA I 10*, 492a3–4).⁵² Notice that Aristotle does not differentiate between any of these remarks: the parts of the face that are signs of the best character simply constitute one set of biological facts among many that are being collected in this treatise.

In discussing the parts of the face, several features are explicitly identified as physiognomic signs, such as for instance the nicks or corners of the eyes: “when these are long, it is a sign of a bad character (κακοηθείας σημεῖον); when they are like combs⁵³ and are fleshy, [it is a sign] of wickedness” (*HA I 9*, 491b24–26). Only in one case does Aristotle simply mention the correlations between differences in body parts and character traits, without identifying them as signs (*HA I 8*, 491b12–14: “this [i.e., the forehead] is big in some, and they are slower; small in others, and they are easily moved; in some it is broad, and they are excitable; and in others it is rounded, and they are spirited”). And, of course, Aristotle also mentions when a certain facial differentiation should *not* be taken as a sign of character; thus, ear coverings that are “in between being smooth and hairy are the best with a view to hearing, but they indicate nothing of character” (ῥῆθος δ’ οὐδὲν σημαίνει) (*HA I 11*, 492a32–34). Except for the case of eye color, all the parts that Aristotle takes to be signs for character belong uniquely to human beings. (As for eye color, Aristotle does not draw a distinction between eye color in humans and in other animals until after he has already stated that greenish eyes are a sign of the best character, thereby possibly implying that greenish eyes are a sign for the best character in *all* living beings that have them; see *HA I 10*, 491b34–492a7.) This is so because the parts that are identified

⁵² Aristotle mentions the same four colors of eyes in *GA V 1*, 779b12–15, and explains their functional differences in terms of the amount of fluid that is inside of them (blue eyes have the least amount of fluid and therefore see well during the night but not during the day, and dark eyes have the most fluid and therefore see well during the day but not during the night). He concludes by saying that “the eye that is in between much and little fluid is best: because it is little it does not hinder the movement of the colors on account of being disturbed, nor does it on account of its volume provide any difficulty of motion” (*GA V 1*, 780a22–25; 22–23: ἡ δὲ μέση τοῦ πολλοῦ καὶ τοῦ ὀλίγου ὑγροῦ βελτίστη ὄψις).

⁵³ Reading κτένες instead of ἰκτινες in *HA I 9*, 491b25.

as signs belong only to humans,⁵⁴ or because the character trait associated with that sign is typical for human beings only. For instance, Aristotle links the positioning of the ear exclusively to tendencies to particular modes of speech—a capacity that is unique to human beings (*HA* I 11, 492a34–b3):

They are large or small or in between, or stick out a lot or stick out nothing or are in between, and the ones in between are a sign of the best character (τὰ δὲ μέσα βελτίστου ἤθους σημεῖον), while the large [ears] and the ones that stick out are [a sign] of a tendency for silly talk and garrulity (μωρολογίας καὶ ἀδολεσχίας).

The domain from which Aristotle draws these signs cannot easily be identified with one of the familiar three physiognomic domains (zoology, ethnography, or human dispositions). This speaks against the suggestion that Aristotle is simply reporting “reputable opinions” in these chapters, since the signs do not seem to fit any of the traditional molds. Instead, as I will argue below, his incorporation of the language of the doctrine of the mean into his identification of parts that signal the best character traits indicates that Aristotle made physiognomy his own.

Physiognomic signs and Aristotle’s doctrine of the mean

The most salient feature in Aristotle’s inclusion of physiognomic material in his discussion of the differentiations of the parts on the head and face in the *History of Animals* is the identification of the middle feature as a sign of the best character (τὸ δὲ μέσον ἤθους βελτίστου σημεῖον), and the extremes as signs (if of anything at all) of natural character flaws.⁵⁵ Aristotle’s treatises are full of references to mean conditions as being productive of good outcomes and therefore as being normative in some sense,⁵⁶ but the language used in these physiognomic cases is especially reminiscent of his “doctrine of the mean” as presented in his ethical treatises.

According to this doctrine, ethical virtues are dispositions (*hexeis*) that hit the mean between two other states—the one involving an excess; the other, a deficiency—such that a virtuous character is being preserved, just

⁵⁴ The relevant passages are *HA* I 8, 491b12–14; *HA* I 9, 491b14–18; and *HA* I 9, 491b24–26. Winking, discussed in *HA* I 10, 492a10–12, might be another example.

⁵⁵ See *HA* I 11, 492a34–b3, quoted earlier, but also *HA* I 10, 492a8–12, and *HA* I 11, 492b30–31, and perhaps *HA* I 10, 492a7–8.

⁵⁶ See Tracy 1969 (*passim*) and Reeve 2012 (pp. 95–96).

as eating or exercising in a manner that is in accordance with the mean preserves health in the realm of medicine.⁵⁷ The mean in this context constitutes feeling the appropriate emotion toward the right things and toward the right people, at the right time and for the right length of time.⁵⁸ It is emphatically not an “arithmetical proportion” (τὴν ἀριθμητικὴν ἀναλογία), but something that is “relative to us” (πρὸς ἡμᾶς)—that is, what the appropriate mean is depends on those attributes of the agent (such as his qualities, abilities, and possessions) that are relevant to his situation,⁵⁹ just as six pounds of food (the numerical mean between two and ten) will be too-little food for the expert wrestler, but too much for the beginning athlete (*EN* II 6, 1106a24–b7). The mean that Aristotle describes in the *History of Animals* as pertaining to the features of the parts on the face of human beings, however, is probably more cognate to the “arithmetical” mean and therefore “belongs to the things” (cf. *EN* II 6, 1106b7: μέσον δὲ . . . τὸ τοῦ πράγματος), perhaps reflecting contemporaneous Greek aesthetic ideals and the geometrical proportions used in contemporaneous paintings and sculptures. For instance, Aristotle explicitly applies this type of mean to noses in an analogy between constitutions and bodily parts (*Pol* V 9, 1309b18–31):

And above all this must not be overlooked, which is in fact now overlooked by the deviant constitutions: the mean (τὸ μέσον). . . They are unaware of the fact that, just as while a straight nose is most beautiful compared to a hooked or snub one, a deviant nose is still beautiful and can bring pleasure to sight, but not when it tends even more toward the extreme (it will first lose the proportion of the part and finally will not even appear to make a nose anymore because of the excess and the deficiency of the extremes); so too is the case with the other parts [of the body], and this also happens with regard to the constitutions.⁶⁰

In this way, having facial features that hold some kind of “measurable” mean between two extremes indicates the presence of a natural character

⁵⁷ *EE* II 3 (passim) and *EN* II 6, 1106b15–34; b33–34: “and therefore excess and deficiency are characteristic of vice, whereas the mean is characteristic of virtue” (καὶ διὰ ταῦτ’ οὖν τῆς μὲν κακίας ἢ ὑπερβολῆς καὶ ἢ ἔλλειψις, τῆς δ’ ἀρετῆς ἢ μεσότης). For the analogy between virtue and health, see, e.g., *EN* II 2, 1104a11–19 and a25–27.

⁵⁸ *EN* II 6, 1106b18–24, and *EN* IV 5, 1125b31–1126a11.

⁵⁹ Gottlieb 2009 (p. 31).

⁶⁰ See also *PA* IV 10, 686b19–20, and Lennox 2001a (p. 319) for the application of mathematical laws to the growth of animal bodies alluded to in this passage.

that predisposes its possessor to being most able to hit the mean “relative to him” in emotions, feelings, and actions. Let me explain this further.

First of all, Aristotle believes that humans have the *species-specific* facial features they have due to their being realizations of the human species form, but that they have the *individual* facial features (such as small foreheads, large ears, or green eyes) they have as the result of the mechanisms of inheritance at work during their embryogenesis. While some of these individual differences of the more and the less are present for the sake of something, most are due to material necessity and due to “what happens during their coming into being” (*GA* V 1, 778a29–b19). The *History of Animals* makes clear that Aristotle takes these individual differences of the more or less to constitute a natural spectrum. Features on the extremes of the spectrum are considered to be deviations from the human ideal (with features falling outside this spectrum presumably forming monstrosities), while the person whose facial features are in the appropriate geometrical mean approximates presumably the Aristotelian counterpart of the Homeric *kaloskagathos*—a person whose outward facial beauty and proportionality represents his inward natural goodness.⁶¹

Second, as we saw in the previous chapters, what is causally responsible for the well-mixedness of a natural character profile—that is, what produces by material-efficient causation the kind of natural character traits that are best with a view to moral development—is a material nature (i.e., a particular blend of blood and level of internal heat) that is itself well mixed and in a mean. The best natural character belongs to those humans or, more specifically, to those men who have blood that forms a stable and proportionate blend and that is neither too hot nor too earthy, and who are therefore also healthiest.⁶² The means that are constitutive of the best blood and of the best facial features are not the same, but both track the same human ideal: the person whose face is proportionate and in a geometrical mean possesses natural character traits that are well mixed and in a chemical mean.

⁶¹ Cf. perhaps Aristotle’s “physiognomic” description of the magnanimous man in *EN* IV 3, 1125a12–16: “The magnanimous person seems to have a slow gait, a deep voice, and calm speech. Since he takes few things seriously, he is in no hurry, and since he counts nothing great, he is not strident; a shrill voice and hasty gait are due to those things.” For the stereotype, cf. Plato *Charm* 159b1–5.

⁶² See, e.g., *PA* III 12, 673b25–26, and *Ph* VII 3, 246b5–6; on the proportionate mean required for successful reproduction, see *GA* IV 2, 767a17–19.

In his *Nicomachean Ethics*, Aristotle explains that habituation is like straightening sticks that are naturally bent by pulling them into the opposite direction (*EN* II 9, 1109b1–7):

It is necessary to consider the things toward which we ourselves are also easily carried away: for by nature some tend to one thing, some to another. And this will be known from the pleasure and pain that come to be in us. For it is necessary to pull ourselves into the opposite direction: for we will arrive at the mean by drawing far away from error, just as people do who straighten the bendiness of sticks (ὅπερ οἱ τὰ διεστραμμένα τῶν ξύλων ὀρθοῦντες ποιοῦσιν).

Like sticks, the natural character traits humans have from birth are often “skewed”; that is, their mixture of elements is off balance in one direction or the other, and in order to correct for this natural deviation and thereby to come closer to hitting the mean, one needs to habitually overcompensate into the other direction. However, as we saw earlier, Aristotle also thinks that some people are “like straight sticks” from birth; their natural character traits are well mixed and dispose them by nature into the direction of the mean. Identifying these people—and those men in particular—is important, since by making the right selection of first citizens of his ideal city the lawgiver will have an easier task making them virtuous.

In conclusion, my suggestion is, then, that when Aristotle identifies a facial feature that holds a kind of geometrical mean as a sign for the best character, that “best character” is the same natural character profile he identifies as best in the *Parts of Animals* (*PA* II 2, 648a9: Ἄριστα), which includes natural courage and intelligence and which he characterizes in his *Politics* as making moral development easier (*Pol* VII 7, 1327b35–38). In this way, well-mixed material natures can be “read off” from someone’s facial features in the way that is suggested by the science of physiognomy. Aristotle comes close to expressing this thought in his *Politics* when he is discussing the importance of musical education for the purposes of habituation, and he mentions in passing that the shapes and colors of *some* perceptible objects can be signs of character (σημεῖα . . . τῶν ἡθῶν) as well, and that for this reason young men should observe the paintings and statues of artists such as Polygnotus⁶³ who express (good) character (*Pol* VIII 5, 1340a28–38):⁶⁴ there

⁶³ Cf. *Poet* 6, 1450a26–28: “for Polygnotus is a good painter of character” (ὁ μὲν γὰρ Πολύγνωτος ἀγαθὸς ἠθογράφος).

⁶⁴ Cf. Xenoph. *Mem* III 10.3, in which Socrates explains to the painter Parrhasius and the sculptor Cleiton that the beauty of the soul and not just that of the body can be captured

thus exist signs for natural character traits that are visible and whose perception contributes to good moral upbringing. Just as Pythagoras used physiognomy as a diagnostic tool for the selection of students for his school, so perhaps should lawgivers use it for the selection of the first generation of citizens and for the identification of natural slaves when building their ideal city, if it is to be a virtuous and happy one.

by their art: since the soul uses the body as a tool, a person's inner character will manifest itself through his physical expression and posture and can thus be represented through visual media.

PART II | The Physiology of Moral
Development

CHAPTER 4 | Eugenics and the Production of Good Natural Character

4.1 Introduction

The ideal student of Aristotle's political science is a freeborn male, well brought up in good habits, experienced in life, well educated,¹ and interested in becoming good himself, but also in becoming able to make others good as a statesman or lawgiver.² Aristotle's account of the ideal city in *Politics* VII–VIII provides us with one account of how to “produce” such men: while it is possible to receive a sufficiently good upbringing and education under nonideal constitutions (cf. *Pol* V 9, 1309b31–33), it is only in the ideal city that happiness and virtue are conceived correctly and that the upbringing and education of young men are organized in the right way.³ And, as we have seen, Aristotle believes that in the production of good citizens, three factors play a role: “nature, habit, reason” (*Pol* VII 13, 1332a38–40).⁴ In the previous part of this book, I focused on the role of nature in moral development and in particular on Aristotle's account of the lawgiver's selection of men with the best natural character traits as the first generation of citizens for his ideal city, and I explained why this particular kind of natural character profile makes the acquisition of virtue easier. In this part of the book, I turn to Aristotle's advice to lawgivers about how to ensure that

¹ *EN* I 3, 1094b23–1095a4 (cf. Iamblichus *Protr* X 54.12–55.7); *EN* I 4, 1095b3–8; *EN* I 13, 1102a7–10; *EN* X 9, 1179b4–31002E.

² Schofield 2006 (p. 310).

³ *Pol* VII 1, 1323a14–19; see also *Pol* I 13, 1260b8–20; *Pol* IV 7, 1293b1–7; *Pol* VII 8, 1328a31–b2; and *Pol* VII 13, 1332a3–10.

⁴ See also *Pol* VII 15, 1334b6–28; *EN* X 9, 1179b20–21; and *EE* I 1, 1214a14–25.

those citizens and their wives give birth to children who are preferably male and have the same kind of natural character traits that make moral development most likely to succeed. I will also discuss the role of habit in producing good citizens, by turning to Aristotle's subsequent account of the habituation and education of these young men. Finally, I will provide an account of why Aristotle believes women can and should acquire character virtues but cannot acquire full virtue.

This chapter examines Aristotle's eugenic theory as presented in the *Politics*, and its relation to his views about reproduction in the biological works. Section 4.2 argues that the recommendations concerning marriage and childbirth that Aristotle provides to lawgivers in *Politics* VII 16 are not simply borrowed from Plato, but rather that Aristotle reshaped them to fit his own biological views about how the most perfect offspring comes to be, and that they have in view the production of male offspring with "good" natural character traits as well as with healthy and strong bodies. In section 4.3, I turn to the evidence outside Aristotle's biological works that suggests—in accordance with the eugenic theory presented in the *Politics*—that Aristotle considers a "good" natural character to be a hereditary feature that provides its possessors with advantages for their moral development. In particular, I shall discuss Aristotle's concepts of "good birth" (*eugeneia*) and "natural talent" (*euphuia*). Finally, in section 4.4, I offer a speculative account for the way in which Aristotle's biological theory concerning the mechanisms of heredity can explain the heredity of natural character traits, which are due to a living being's material (rather than its formal) nature.

Together, these sections exhibit the manner in which, according to Aristotle, becoming good in the ideal city *starts* with lawgivers helping nature by regulating childbirth. Men do not become virtuous by nature, but if—thanks to the regulations put in place by the lawgivers—they are born with "good" natural character traits, their moral development will at least be easier and presumably more likely to succeed. Given the importance of achieving the goal of happiness, Aristotle believes this is a natural advantage well worth striving for.

4.2 *The Production of Male Offspring with "Good" Bodies and Characters in the Ideal City*

Aristotle's eugenic theory

Aristotle presents his eugenic theory in *Politics* VII 16. Having concluded his exposition of the material causes of the city, which included the identification

of the natural character traits the first generation of citizens should have as the raw materials of the ideal city discussed earlier, Aristotle turns to the question of how this city and the men who have been recruited to be its citizens in fact become virtuous (*Pol VII 13, 1332a35–36: τοῦτ' ἄρα σκεπτέον, πῶς ἀνὴρ γίνεται σπουδαῖος*). The first question is what the starting point of the moral education of these future citizens should be—whether it should focus first on habituation or instead on the instruction of reason. Aristotle concludes that, actually, the *very first* task of the lawgiver is to take care of the *bodies* of the future citizens, since the development of the body chronologically proceeds that of the soul (*Pol VII 15, 1334b25–28*). And since the development of bodies starts *before birth* during embryogenesis (*Pol VII 15, 1334b13–14*), it is at this earliest beginning leading up to birth that the care of lawgivers should start (*Pol VII 16, 1334b29–32*):

If, then, it is necessary that the lawgiver sees to it *from the start* (ἀπ' ἀρχῆς) that the bodies of those that are being bred (τῶν τρεφομένων) come to be as good as possible, he should take care first of marriage, when and being of what quality it is necessary for [couples] to enter into a marital relation with each other.

In other words, while it is nature that determines the qualities of one's body and soul (cf. *Pol VII 13, 1332a40–42*), this does not mean that the “preparatory” role played by nature in the moral development of men should be left to luck (*Pol VII 13, 1332a31–32*): “For the city to be excellent is no longer a task of luck but of scientific knowledge and deliberate choice.”

Accordingly, Aristotle turns childbirth into a form of public service (*Pol VII 16, 1335b28–29: λειτουργεῖν . . . πρὸς τεκνοποιίαν*; cf. *Pol VII 16, 1335b36–37*), aiming at the production of offspring with the natural qualities of body and mind that are most serviceable for their future virtuous life of a citizen and most beneficial for their moral development. This is necessary, first, because Aristotle seems to think that it is difficult to reproduce *well* or to do so in a way that is *most in accordance with nature*, and hence that left up to chance and to random couplings between men and women, not enough men would be born to replenish the body of citizens of the newly built city, and that those born would not all or even for the most part have the most-optimal bodies and minds for habituation. Lawgivers can compensate for natural disadvantages and correct them through habituation, but their tasks will be more difficult and their chances of producing a virtuous, happy city will be smaller. Second, although having a perfect (i.e., strong, tall, and healthy) body and mind are not themselves moral traits, as we have seen in the previous chapters, Aristotle believes that there is a direct material-causal

link between the properties of one's body (and especially one's blood, but also perhaps one's stature and the proportionality of one's facial features) and the natural character traits one has, and that the quality of one's natural intelligence or mind (*dianoia*) has repercussions for the quality of one's deliberative capacities and for the ease with which one can acquire the virtues of intellect (*dianoêtikai aretai*). In other words, while character virtue and practical wisdom are virtues of the *soul*, and while they can thus be defined without reference to the body, it would be a mistake to consider them as ontologically and functionally independent of the body and therefore to think that bodily qualities are irrelevant for the process of virtue acquisition: Aristotle makes it very explicit that from the start, the body (and hence reproduction) needs to be prepared for the sake of soul and for the sake of what constitute its moral virtues (*Pol VII 15, 1334b13–28*; cf. *PA I 5, 645b14–20*). Or, to return to Aristotle's own analogy between the lawgiver and the shipbuilder (*Pol VII 4, 1325b39–1326a5*), while it is perhaps possible to build a ship from any quality of wood, and while the truly expert shipbuilder will perhaps be able to compensate for and fix the natural deficiencies of the materials he uses for his ship, the more suitable his materials are for their intended function from the start, the better the end product of his craft will be. Similarly, lawgivers should select and aim to produce the best natural materials possible for their cities: that is, they should select and aim to produce citizens with bodies that are strong and healthy, with the right amount of spirit to give rise to natural courage, and with natural intelligence, since the latter form the best suitable raw materials for moral development.

In order to achieve this, then, Aristotle requires lawgivers to make three sorts of arrangements. First, they should make arrangements concerning marriages; for instance, about who should marry whom and at what age (*Pol VII 16, 1334b30–38*). Second, they need to legislate the timing at which couples should start having children so as to make the age difference between the two generations neither too large nor too small (*Pol VII 16, 1334b38–1335a3*). And third, they need to make sure that the bodies of the newborns are as they wish them to be (*Pol VII 16, 1335a3–6*), which also involves regulating the diets and the physical education of children (Aristotle discusses these in *Pol VII 17* and *VIII 3–4*).

According to Aristotle, all three components can be taken care of almost at once “by following a single provision” (*Pol VII 16, 1335a7: κατὰ μίαν ἐπιμέλειαν*), which amounts to making sure that men and women marry and start to have children when they are both in their bodily prime (*Pol VII 16, 1335a30–32; a30: ἀκμάζουσί τε τοῖς σώμασιν*; this happens around the age of thirty-seven for men and around eighteen for women). They should stop

having children once the men are about five years beyond the prime of their intelligence (*Pol* VII 16, 1335b32–37; b32: κατὰ τὴν τῆς διανοίας ἀκμὴν; this happens around the age of fifty; cf. *Rh* II 14, 1390b9–11), such that both husband and wife reach their decline together.

Aristotle provides four arguments for why young couples should not reproduce, the first⁵ of which pertains most directly to the quality of their offspring (*Pol* VII 16, 1335a11–17):

The coupling of young people is bad with a view to the production of children. For in all animals the offspring of the young is imperfect, and they produce more females and [offspring] small in stature (ἀτελῆ τὰ τῶν νέων ἔκγονα, καὶ θηλυτόκα μᾶλλον καὶ μικρὰ τὴν μορφήν), such that this necessarily also happens in the case of human beings. And there is evidence: for in as many of the cities in which it is customary to pair up young men and young women, the bodies are imperfect and small (ἀτελεῖς καὶ μικροί).

Couples who reproduce before their bodies have reached their prime, and who therefore have not yet fully realized their own human form and are in that sense not “perfect” or “complete” themselves, produce imperfect—that is, small, female—offspring.

Similarly, couples who reproduce when their bodies and minds are already in decline also produce imperfect and weak offspring (*Pol* VII 16, 1335b29–31):

For the offspring of old people, just as those of the young, come to be imperfect both in body and in intelligence (ἀτελῆ γίγνεται καὶ τοῖς σώμασι καὶ ταῖς διανοίαις), and those of very old people are weak (ἀσθενῆ).

Evidently, Aristotle believes there to be a correspondence between the physiological conditions of the bodies and minds of the parents and the level of perfection of their offspring, which is also why he believes that pregnant women should take care of their bodies (by taking daily walks and by adopting a filling diet), while keeping their minds somewhat more relaxed: “for it seems that offspring benefits from its [mother’s] condition, just as plants

⁵ The other three arguments refer to (2) the more difficult labor and higher death rate in child-birth among younger women. (3) the benefits for the character (specifically the temperance) of women if they have sex when they are older rather than when they are young, (4) and the fact that the growth of the bodies of men could be stunted if too-much nutrition is turned into semen, which implies that it is better to have intercourse after the growth of the body has been completed.

[benefit] from the earth” (*Pol* VII 16, 1335b18–19: ἀπολαύοντα γὰρ φαίνεται τὰ γεννώμενα τῆς ἐχούσης ὡσπερ τὰ φυόμενα τῆς γῆς). If couples stick to this one provision, their offspring will more likely be born as male and as more perfect in natural body and intelligence. Regarding offspring that come to be deformed (as opposed to less perfect and female), Aristotle advises that there should be a law against rearing them (*Pol* VII 16, 1335b20–21: ἔστω νόμος μηδὲν πεπηρωμένον τρέφειν).

The biological background of Aristotle’s eugenic theory

Aristotle does not offer explanations in the *Politics* for why couples who are in their bodily and mental prime produce more-perfect offspring. Presumably, his readers were already familiar with this idea, since it is defended by Socrates in Plato’s *Republic* (see *Rep* 459a1–561e9, where Socrates argues that in order to keep a breed—of animals or humans alike—noble, one should let the best reproduce with the best, and let reproduction take place during the prime of their life). However, even though Aristotle’s indebtedness in the *Politics* to Plato’s eugenic views is undeniable,⁶ I believe that Aristotle did not simply borrow those views from Plato, but that he reworked them within the framework of his own political and natural science such that they are—at a minimum—consistent with his own biological theory of reproduction. In other words, the eugenic recommendations Aristotle offers in the *Politics* are based on the same, and often very specific, biological “facts” that he uses as evidence in the *History of Animals*⁷ and that form the basis for his explanations in the

⁶ See also Plato *Pol* 310a1–310c8 for the image of lawgivers as weavers of characters, and *Leg* 721a3–8 and 772e7–e4 for the view that it is the first task of lawgivers to pass marriage laws in order to balance wealth and character, and to ensure the birth of well-mixed children.

⁷ Note, for instance, that all four arguments Aristotle brings in against child production by young parents (as discussed above and in note 5) are variations of “facts” concerning reproduction that Aristotle also mentions in his discussion of human pregnancy and childbirth in *HA* VII 1, 582a17–27: “[1] Until the age of twenty one the *sperma* is first infertile; next it becomes fertile, but young men and women produce small and imperfect offspring (γόνυμα μὲν μικρὰ δὲ καὶ ἀτελῆ γεννώσι), as also happens in the case of most of the other animals. [2] And young women conceive rapidly, but when they have conceived, they suffer more in childbirth. [4] And their bodies for the most part develop imperfectly and age faster—both [bodies] of lustful men and of women who have given multiple births. For it appears that no more growth occurs after three childbirths. [3] And women who are unrestrained with regard to sexual intercourse become more sedate and temperate when they have given birth many times.” Cf. also *Pol* VII 17, 1336a5–6, where Aristotle refers to an investigation of animals as informing his recommendation to feed children mostly milk, perhaps as recorded in the *History of Animals* (see especially *HA* III 20 and VIII 1, 588a3–8), and *Pol* VII 17, 1336a34–39, where Aristotle criticizes Plato’s *Laws* for prohibiting children to scream, whereas he believes that holding breath—as happens in screaming—gives strength, a “fact” he also mentions in *GA* II 4, 737b36–738a1; I owe these latter two references to Reeve 1998 (pp. 223–224).

Generation of Animals. Because these treatises make use of the same set of reproductive facts, it is possible to flesh out at least three⁸ of Aristotle's eugenic recommendations in the *Politics* with the help of his *Generation of Animals*.

First, the *Generation of Animals* as a whole offers an explanation for why Aristotle endorses in the *Politics* the idea that couples should reproduce when their bodies are in their prime and not before or after. In this treatise, Aristotle describes embryogenesis as a form of matter being concocted and thereby being "refined" and "informed" to an appropriate degree. Roughly speaking, reproduction in sexually differentiated animals involves two principles:⁹ the male, who provides the form and the source of movement, and the female, who provides the matter. More precisely, the male transmits a (set of) potential(s) for form that is the same in kind as the form he himself possesses in actuality, and he does this through his *sperma*, which acts as a vehicle for "form-transmitting motions." These motions are derived from the capacities for the development and maintenance of the male's own body and therefore correspond to his form (that is, to the way in which the human species form is realized in him, as including individual differences of the more and the less in the sizes and shapes of his bodily parts: see *GA* IV 3, 767b23–768a2). These motions produce the fetal heart (*GA* I 22, 730a32–b32, and *GA* II 1, 735a3–4; cf. *PA* I 1, 640a17–26), after which the developing embryo takes over its own further development (*GA* II 4, 740a5–24). The female contributes her menses, which is blood concocted up to a certain point: it is the useful residue of the ultimate nutriment that is supposed to go to all parts of her own body but is now used to produce another creature like herself (*GA* II 4, 738a33–b5). For Aristotle, reproduction is successful and "most natural" when the male principle is able to "dominate" and concoct the female menses and shape them into its own likeness: the resulting offspring is a physically complete male who resembles his father (see especially *GA* IV 3, 767b15–23 and 768a21–28).¹⁰ In order for the male principle to dominate, the heat that resides in the motions must be appropriately "hot," while the female menses must be appropriately moist and quantified: the

⁸ Cf. also *GA* IV 2, 767a28–35, which offers a partial explanation for the recommendations Aristotle offers in *Politics* VII 5–6 regarding the best locality for the ideal city.

⁹ My account here builds on but does not necessarily agree with especially Henry 2006 (pp. 425–455), Henry 2009 (pp. 368–383), and Reeve 1992 (pp. 198–207).

¹⁰ On Aristotle's sexism in his account of sexual differentiation, see Henry 2007 (pp. 251–269) and Nielsen 2008 (pp. 373–405). My own understanding of this issue is more congenial to Nielsen's account: although the teleological process of reproduction has as its proper, natural end the production of viable offspring of the same species, and not the production of *male* offspring per se, Aristotle's evaluative language throughout the *Generation of Animals* makes it

two principles must be “proportionate” to each other.¹¹ If the male imparts too-much heat, he will burn up the menses, and no living being will come to be, but if his motions are too cold or if the female menses are too copious or too moist, then either no shaping of the materials will take place or the offspring will turn out to be imperfect and physically defective, like a female or some other monstrosity (*GA* II 6, 743a29–32; *GA* IV 3, 769b7–13; and *GA* IV 4, 770b16–17). In *GA* IV 2, Aristotle offers additional evidence in support of his account of sexual differentiation (see especially 766b28), which includes the same “facts” about what happens when men reproduce when they are either young or old, as are also mentioned in the *Politics*. In this case, however, Aristotle also adds his own explanation (*GA* IV 2, 766b29–34):

For young men produce more female offspring than those who have reached their prime, and old men even more: for in the first the heat is not yet perfect, while in the latter it is lacking. And those with moister and more-feminine bodies produce more female offspring, and moist *sperma* [produces more female offspring] than what is condensed. *For all these things happen because of a lack of natural heat.*¹²

So even though it is not among the purposes of the *Generation of Animals* to encourage parents to produce male offspring, it does provide a causal background to Aristotle’s normative recommendations in the *Politics* to attempt just that: the male heat is “appropriately hot” when men are in their physical prime¹³ (just like the female menses are optimally moist and quantified when women are in their physical prime), and it is this physiological condition that increases their chances of producing male offspring resembling themselves—which is the only offspring that can develop into the virtuous citizenry of an ideal city.

clear that he (1) considers males as hotter and therefore as more perfect instantiations of a sexually differentiated animal kind, while considering females as cooler and therefore as inferior instantiations of such a kind, and that he (2) attributes the coming to be of females to material necessity disturbing the natural teleological process (see especially *GA* VI 3, 767b6–14). I will return to Aristotle’s account of the female and her biological imperfections in chapter 6.

¹¹ See *GA* I 18, 723a29–31; *GA* II 6, 743a26–29; *GA* IV 1, 767a17–20 (τὸ δὲ θερμὸν . . . δεῖ πρὸς τὸ δημιουργούμενον ἔχειν τοῦτον τὸν τοῦ μέσου λόγον); and *GA* IV 2, 767a16 (δεῖ συμμετρίας πρὸς ἄλληλα) and 767a23 (μῖξει . . . δεῖ τῆς συμμετρίας).

¹² Cf. *GA* IV 3, 767b10–13: “since it is possible that the male sometimes does not dominate, either because of youth or old age or because of some other such cause, it is necessary that the birth of females happens among animals.”

¹³ Cf. *Rh* II 12, 1389a18–20, and *Rh* II 13, 1389b29–31, discussed in chapter 2 (on the physiological conditions of young and old men).

Second, the *Generation of Animals* provides a causal background to Aristotle's recommendation in the *Politics* concerning the season in which couples should reproduce. As Aristotle points out in *Pol* VII 16, 1335a36–b2, the current practices of people to marry in the wintertime are correct, and he adds that:

[Couples] themselves ought to study with a view to the production of children (δεῖ . . . αὐτοὺς . . . θεωρεῖν πρὸς τὴν τεκνοποιίαν) both the sayings from the physicians as well as those from the natural scientists: for the physicians speak sufficiently about the right times for bodies, and the natural scientists [speak sufficiently] about the winds, favoring northern winds more than southern ones.

It is not clear whose writings Aristotle has in mind here, but presumably these must be physicians and natural scientists whose doctrines fit well enough with his own views about embryology and the production of the best offspring. In any case, his *Generation of Animals* provides the following explanation for why northern winds—which are prevalent in the winter—are better with a view to child production (*GA* IV 2, 766b34–767a1):

And the northern wind produces more males than the southern one: for bodies are moister during southern winds, such that they also have more residues. And more residue is more difficult to concoct, and because of this, in the men the *sperma* and in the women the menstrual discharge are more moist.

The explanation is thus simply that southern winds make the female menses moister and hence more difficult to concoct, whereas northern winds produce dryness (cf. *Pr* I 10–12) and thereby help the male principle in concocting the menses: if it is one's objective to produce male offspring, as it would be in the ideal city, then reproduction should take place when the material properties of the environment enhance the process of concoction inside the female womb, *because* better concoction results in male offspring.¹⁴

Third, the *Generation of Animals* offers an explanation for Aristotle's recommendations concerning the kind of bodily conditions prospective parents ought to be in according to the *Politics* (*Pol* VII 16, 1335b2–12). In outline, future parents should be in a bodily condition that holds the middle (1335b8: ἡ μέση τούτων) between that of an athlete and that of someone requiring

¹⁴ Cf. *GA* IV 2, 767a8–11; *HA* VIII 13, 597b11–12; *Pr* I 23–24; and *Pr* XIV 5, 909a32–34: “Why is it that during southern winds impregnation produces more women? Is it because more moisture thickens more slowly? And during southern winds the *sperma* becomes moister because of the moisture of the [environmental] mixture.”

medical treatment and who is not properly capable of exertion. That is, the bodily condition that is “useful with a view to the kind of bodily condition good for citizens or with a view to health and childbearing” results from exertion but not from violent exertion, and not from performing just one activity; instead, the bodily condition must be useful with a view to all the activities of free people (1335b5–11). And these things, Aristotle adds, must belong similarly to men and women (1335b11–12). The reason why such an intermediate bodily state is best for child production is supplied in the *Generation of Animals* (GA IV 3, 768b27–33): the bodies of athletes—because of they eat so much—contain so much nutriment that their natures can no longer master it, making their body parts deformed and disproportionate, and this kind of deformation of the body can happen also in the developing embryo, which then itself ends up being “pluriform” (GA IV 3, 768b28: *πολύμορφον*) and imperfect (cf. GA II 3, 737a25–29, and HA VII 6, 585b28–586a4).

In sum, the recommendations Aristotle gives in the *Politics* to lawgivers for how they should regulate marriage and childbirth in the ideal city thus conform to the biological facts presented in the biological treatises concerning the physiological conditions Aristotle believes are most likely to produce perfect, male offspring.

4.3 *The Moral Advantages and Heredity of “Good Birth” and “Natural Talent”*

In order to illustrate the importance of nature as a factor in the moral development of men, and the plausibility of the thesis that Aristotle believes that offspring receive their natural character through birth from their parents (such that parents with better natural qualities are more likely to produce male offspring with a good natural character), I will briefly discuss two natural qualities Aristotle brings up outside his biological treatises, which can be acquired only through birth and are described as giving its possessor advantages in becoming virtuous.¹⁵

Good birth

The first of these qualities is being of “good birth” (*εὐγενής*). Being of good birth typically involves both being born from indigenous or ancient

¹⁵ “Bad” natural character traits can also be “due to the nature of the stock” (such as the softness found among the kings of the Scythians: see EN VII 7, 1150b12–15), but my focus here is on the heredity of “good” traits.

peoples (the concept thus denotes a kind of aristocratic descendancy) and displaying some kind of excellence—in character, wealth, or both—where this excellence must belong both to one’s ancestors and oneself.¹⁶ Men who are qualified as being “well born” thus possess some kind of inherited excellence, which is why they are desirable for ideal cities: Aristotle includes “good birth” (as well as “having children of good quality”; i.e., children who possess excellences both of body and soul: see *Rh* I 5, 1360b39–1361a11) among the many goods of life (*Rh* II 9, 1387a14–15), among the qualities of the city (*Pol* IV 12, 1296b17–18), and even among the (necessary but not sufficient) parts of happiness (*Rh* I 5, 1360b19–29, and *EN* I 8, 1099b2–6).

Although generally “good birth” may thus refer to an inherited excellence either in wealth or character, occasionally Aristotle appears to push for a closer connection between good birth and the kind of (prehabitu-ated, natural) character that is associated with or conducive to moral virtue. For instance, in the *Politics* he groups “good birth” together with virtue and being good (*Pol* V 1, 1301b40–1302a2; 1301b40: εὐγένεια καὶ ἀρετῆ; 1302a1: εὐγενεῖς καὶ ἀγαθοί), while contrasting these qualities with wealth, on the grounds that the former can be found only rarely, whereas the rich abound everywhere.¹⁷ In addition, in his discussion of the power of reason as a factor in moral development in the *Nicomachean Ethics*, Aristotle singles out young men who are “free” (τῶν νέων τοὺς ἐλευθερίους) and have a “character that is well born” (ἡθὸς τ’ εὐγενές) as those for whom moral arguments are effective in turning them toward virtue (i.e., “good birth” provides the natural character and intelligence that is receptive to appeals to reason), and he contrasts them with “the many” whose natural desires and inclinations are such that they need habituation and the constraints of laws instead (*EN* X 9, 1179b7–10). On how such men with “well-born characters” come to be, the ethical treatises offer no

¹⁶ See *Rh* I 5, 1360b31–38; *Pol* IV 8, 1294a21–22; and *Pol* V 1, 1301b3–4: “for of good birth are thought to be those who possess ancestral excellence and wealth.”

¹⁷ Cf. Burnyeat 1980 (pp. 69–92), at p. 89, n. 7: “His [i.e., Aristotle’s] view in the *Politics* is that it is likely that good birth will go with moral merit, but no more than that” (*Pol* 1283a36 in its wider context of 1282b14). Burnyeat also cites *Pol* III 13, 1283a36–37, which states that “in addition, it is likely that those who have come to be from better [ancestors] are better [men], for good birth is excellence of stock” (ἔτι διότι βελτίους εἰκὸς τοὺς ἐκ βελτιόνων, εὐγένεια γὰρ ἔστιν ἀρετῆ γένους). Cf. also *Rh* I 9, 1367b29–31, and *Pol* I 6, 1255a39–b4, on the common assumption that from a good man good offspring comes to be; Aristotle explains in the second passage that “nature aims to do this often but cannot.” On this assumption, see also Plato *Charm* 157d9–158b4, *Cra* 394a1–5, and *Tim* 87a7–b8.

answer, but a passage in the *Rhetoric* offers the following suggestion (*Rh* II 15, 1390b21–31):

“Good birth” (εὐγενὲς) is in accordance to the excellence of the stock, but “being true to one’s descent” (γενναῖον) is in accordance with not displacing from [one’s] nature (κατὰ τὸ μὴ ἐξιστασθαι τῆς φύσεως):¹⁸ this for the most part does not happen to those of good birth, but many of them are worthless men (εἰσὶν οἱ πολλοὶ εὐτελεῖς). For there is in the generation of men a certain yield (φορὰ γὰρ τίς ἐστὶν ἐν τοῖς γένεσιν ἀνδρῶν), just as there is among things that come to be from the land, and sometimes when a stock is good, over a certain time excellent men are produced and then [later] yields them again [i.e., after a period of producing worthless men]. Naturally talented stock degenerates into more manic characters (ἐξίσταται δὲ τὰ μὲν εὐφυᾶ γένη εἰς μανικώτερα ἦθη), such as for instance the offspring of Alcibiades and of Dionysus, and steady [stock degenerates into] stupidity and dullness, such as for instance the offspring of Cimon, Pericles, and Socrates.

According to this account, excellent fathers produce offspring with good natural character traits, but—as also happens with the yields of the lands—good stock often degenerates: men born from a good stock do not necessarily stay true to the good characteristics of their family and may actually turn out to be rather worthless. The production of “excellent men” is subjected to fluctuations; I will offer a possible biological explanation for why this might be the case in section 4.4 below.¹⁹

Natural talent

The second natural quality that can make moral development easier is that of being “naturally well endowed” or “talented” (εὐφυῆς), which is also mentioned in the *Rhetoric* passage quoted above as a quality one can receive from one’s family (*Rh* II 15, 1390b28: τὰ μὲν εὐφυᾶ γένη). Aristotle uses the term (which literally means “being well grown”) both for positive and negative

¹⁸ Cf. *HA* I 1, 488b11 and 16–21, where Aristotle offers the same definitions of “good birth” and “being true to one’s descent,” while explicitly linking them to the kind of natural characters animals have: “They [i.e., animals] also differ from each other with regard to character in the following differences: . . . other animals are free and courageous and of good birth (εὐγενῆ), such as the lion, [and] others are true to their descent (γενναῖα) and wild and treacherous, as the fox; for good birth is being of good stock, but being true to one’s descent is not degenerating from one’s own nature.”

¹⁹ That Aristotle had an interest in providing a biological account of how prehabituated, natural excellence or goodness can be transferred from father to offspring can be gleaned

dispositions that living beings have by nature (e.g., asses and horses are naturally endowed toward sterility according to *GA* III 8, 748b7–17, while “soft-fleshed” humans are naturally talented regarding tactile intelligence according to *DA* II 9, 421a23–26), but in moral contexts Aristotle reserves the term for men who have a natural talent for making the right decisions and for desiring the right things, but without necessarily having any practical wisdom. Thus, in the *Topics* Aristotle argues that in order to become practiced in arguments, one has to acquire certain habits, but that one also needs a natural talent (*Top* VIII 14, 163b12–13: δεῖ δὲ πρὸς τὸ τοιοῦτον ὑπάρχειν εὐφυῶ) for choosing which of the two opposing premises one ought to defend. As he explains (*Top* VIII 14, 163b12–16):

This is true natural talent (ἡ κατ’ ἀλήθειαν εὐφυῖα), rightly to be able to choose the true and to avoid the false. For people who are naturally like this (οἱ πεφυκότες) are well capable of doing just this: for by liking and disliking correctly what is set before them they judge correctly what is best.

from the following fragment—if it is authentic—attributed to his lost dialogue *On Good Birth* (Stobaeus *Flor* IV xxix, fragment 94R³, 13–32): “Good birth is excellence of stock, and excellence is among the goods, and a stock is good in which there have been many good individuals. And this happens when there is a good principle in the stock: for a principle has such power—to prepare many things like itself. For that is the function of a principle—to produce many others like itself. Therefore, when there has been one individual of this kind in the stock and *he is so good that many generations receive his goodness* (οὕτω σπουδαῖος ὥστ’ ἔχειν τὸ ἀπ’ ἐκείνου ἀγαθὸν πολλὰς γενεάς), *this stock is necessarily good*. For there will be many good humans if the stock is human, [many good] horses if it is equine, and similarly also with regard to the other animals. Thus it is reasonable that neither the rich nor the good but those who are from the old rich or the old good would be of good birth. For the definition seeks the truth: for a principle is higher than everything. But it is not even the case that those born from good ancestors are well born in every case, but as many as happen to have among their ancestors principle holders who are good. When a man is good himself but does not have the natural capacity to give birth to many men similar [to himself] (τοιούτην δύναμιν τῆς φύσεως ὡς τίκειν πολλοὺς ὁμοίους), the principle does not have in those cases such capacity.” According to this passage, it is the natural strength or capacity of the original male principle that determines whether the goodness of the stock is passed on to the offspring.

On the issue of the authenticity of this fragment, not much is certain. The evidence seems to speak in favor for Aristotle actually having written a dialogue with the name *On Good Birth* (thereby illustrating his interest in the topic), since it is listed by Diogenes Laertius among Aristotle’s dialogues (*Vitae* V 22), and its genuineness has been confirmed both by Stobaeus and Atheneaus, although it has also been doubted by Plutarch. On this, see Ross 1949 (pp. viii–ix and 59–62). However, since Stobaeus made use of previous gnomologies, anthologies, and doxographies in excerpting the materials for his *Anthology*, it is impossible to determine whether this particular fragment is Aristotle’s or not. As was suggested to me by Philip Horky, the phrase “For the definition seeks the truth: for a principle is higher than everything” seems especially suspicious and might be a later gloss.

Similarly, in the *Eudemian Ethics*, Aristotle argues that some good fortune is due to nature and not to luck, explaining that “if someone is lucky or unlucky because of the kind of man he is, just as because he is blue eyed he does not have sharp vision, the cause is not luck but nature, for he is not fortunate but like someone who is naturally talented” (*EE VII 14*, 1247a36–38; a38: οἶον εὐφυής). Examples of such naturally talented people—whose natural conditions are a cause of steady good fortune—are those who are naturally well endowed in their desires and appetites (*EE VII 14*, 1247b21–1248a1). These men desire by nature the right things at the right time and in the manner in which they ought to desire them, and they are able to do all this without being guided by reason and even after having reasoned badly. Aristotle compares them to musical people who exhibit a natural talent for singing and are therefore successful, even if they lack knowledge about singing and cannot teach their skills to anyone else. In both cases, these naturally talented men would be the ones we would call “fortunate *by nature*” (*EE VII 14*, 1247b28: φύσει ἄρα οἱ εὐτυχεῖς εἶεν ἄν).

The fact that some people have a natural talent for desiring the right things and therefore for making the right decisions in action does not *necessarily* make them more successful at habituating themselves correctly and at achieving moral virtue: without the development and integration of practical reason, they are unlikely to move beyond the acquisition of one or several of the natural virtues (cf. *EN VI 13*, 1144b34–35: “for the same person is not the best endowed by nature—εὐφύεστατος—for all [virtues], such that he will have already acquired one but the other one not yet”). However, Aristotle thinks that this kind of talent at least can be *perceived* as providing a natural advantage. For instance, in a debate about whether or not men are themselves responsible for the way they perceive ends (*EN III 5*, 114b1–12), Aristotle suggests that someone could object that the perception of ends is not up to us but is instead determined by nature: some people just have a good “natural eye” (114b6–7: φύναι δεῖ ὡσπερ ὄψιν ἔχοντα) for making correct judgments and for choosing what is good, whereas others do not and so will make bad choices because nature fixed the wrong ends for them. Only the first group possesses what is “the greatest and the best”; namely, “a complete and true natural talent” (114b8: εὐφυής; 114b11–12: ἡ τελεία καὶ ἀληθινὴ . . . εὐφυΐα)—the kind of talent one cannot learn or receive from anyone else, but that one possesses (or not) from birth (114b10: ἀλλ’ οἶον ἔφν τοιοῦτον ἔξει). Of course, Aristotle goes on to deny that humans are not responsible for the way they perceive ends, but that leaves unaffected his claim that having this kind of natural talent is

one of the greatest things to have, since it puts one further on the road toward virtue.²⁰

In sum, from these materials it appears that Aristotle subscribes to the following two views: first, that the possession of certain natural attributes of body and soul can make the process of moral development easier and second, that—since one comes to possess those attributes naturally, even if not reliably, through birth and via one’s “stock”—it is prudent for lawgivers to regulate marriage and childbirth in the ideal city as much as possible, with a view to promoting the birth of male offspring with the natural qualities of body and character that are most suitable for moral development and the life of a citizen.

In the final section below, I flesh out some often-neglected aspects of Aristotle’s account of familial resemblances as presented in the *Generation of Animals*, and I show how this account is able to explain the existence of familial resemblances also in the case of natural character traits and thereby lends support to Aristotle’s claims about “good birth” and “natural talent” in the ethical treatises.

4.4 *A Biological Account of the Heritability of Natural Character*

Recent scholarship on Aristotle’s biology has made great progress in increasing our understanding of Aristotle’s account of the coming to be of familial resemblances between parents and offspring with regard to the sizes and shapes of their bodily parts.²¹ Without going into too-much detail, and while setting aside many of the remaining interpretative issues, the mechanisms of Aristotle’s theory of heritability can be summarized as follows.²²

²⁰ See *EE* VII 2, 1237a3–7: “As a human being one is well suited and on one’s way [toward virtue] (εὐθέτως δὲ καὶ πρὸ ὁδοῦ ἄνθρωπος ὢν)—for things that are good without qualification are by nature good to him—and similarly a man compared to a woman and a naturally talented person compared to one without talent (ὁμοίως δὲ καὶ ἀνὴρ ἀντὶ γυναικὸς καὶ εὐφυῆς ἀφυοῦς), and the way forward is through pleasure: it is necessary that what is good should be pleasant.”

²¹ See note 9 for references.

²² Note that for Aristotle this type of inheritance is a parallel case of sexual differentiation: both phenomena are due to the same causes (*GA* IV 3, 767a36–b5; a36: αἱ δ’ αὐταὶ αἰτίαι . . .).

Aristotle's theory of heritability

First, this type of familial resemblance mentioned above is thought to come to be during the process of embryogenesis as a result of the replication of form that is involved in that process: that is, the species form as it is realized in the parents—with its individual differences of the more and the less in the sizes and shapes of its bodily parts—is replicated in the offspring. When the male principle, which involves the form-transferring motions the father imparts into the female and the heat that resides in these motions, dominates and properly concocts the useful part of the residue present in the female menses, it will shape the embryo in accordance with its own shape (καθ' αὐτήν . . . τὴν μορφὴν) and “bring” the material “to itself” (εἰς αὐτὸ ἄγει): the embryo will receive its own capacity to concoct blood into *sperma* and to generate male reproductive organs, but it will also resemble its father in its other morphological features (see *GA IV 1*, 766b12–16, and *GA IV 3*, 767b15–22).

Further, when the male principle “does not dominate [the menses] and cannot concoct it through its lack of heat and does not lead it to its own proper form (εἰς τὸ ἴδιον εἶδος τὸ αὐτοῦ) but is defeated in this respect,” its motions degenerate into their opposite (or might even perish): the embryo ends up with an incapacity to concoct *sperma* and develops female reproductive organs (*GA IV 1*, 766a22–28 and 766b15–18). The same happens with regard to any other of the male's capacities:²³ the failure of the male principle to dominate the menses “makes the embryo deficient with respect to whichever capacity it could not dominate” (*GA IV 3*, 767b22–23), and the embryo will resemble its mother in all those respects (*GA IV 3*, 768a2–11). In cases such as these, the motions present in potentiality in the mother's menses are activated and take over the formation of the relevant part of the embryo, thus producing a part resembling her own (*GA IV 3*, 768a11–14 and 768b4–5).

²³ Note that by capacity Aristotle here has in mind the different levels of potentials that make up the father's substantial being or formal nature: he is a male, an individual male, and a human being, and from the potentials of each of these “levels” of informed matter, so to speak, come motions that are being transferred through his *sperma* (*GA IV 3*, 767b35–36: διόπερ ἀπὸ τῶν δυνάμεων ὑπάρχουσιν αἱ κινήσεις ἐν τοῖς σπέρμασι πάντων τῶν τοιούτων). From among the properties that belong to the father “insofar as he is capable of reproducing and not accidentally” (*GA IV 3*, 767b28: καθὸ γεννητικόν, ἀλλ' οὐ κατὰ συμβεβηκός), which are his formal characteristics (see Henry 2006, p. 435), some are closer while others are further away, and among the motions derived from these potentials, some are stronger and others are weaker. And since “that which is proper and in accordance with the individual is always stronger with a view to reproduction” (*GA IV 3*, 767b29–30; cf. 767b32–33), the offspring will end up as an almost perfect formal replica of his father, *if* all the motions of the father's potentials dominate and do not degenerate into their opposite.

And finally, the motions either of the male or the female that dominate may nevertheless “relapse” and “fall back” to their nearest motion, derived from their ancestors, which then becomes actualized and produces a part resembling that of the corresponding ancestor (or even of the universal of human being itself, if all motions relapse so far back that they all run together: see *GA* IV 3, 768b10–15). With these three “general suppositions” concerning (1) the domination of form-transmitting motions or their degeneration into their opposite, (2) their presence in actuality or potentiality, and (3) their relapsing to motions that are further away from the parent qua individual (see *GA* IV 3, 768b5–10),²⁴ Aristotle is able to explain why, for instance, sometimes a son resembles neither of its parents but instead one of its grandparents, or why a daughter inherits the snub nose of her father but the almond-shaped eyes of her mother.

However, even though this theory of inheritance—as relying on the successes and failures of the form-transmitting motions during embryogenesis as its primary causal mechanism—has ample explanatory force, it does not in fact explain *all* the heritable features Aristotle himself suggests that an adequate theory of reproduction should be able to explain in his refutation of pangenesis theories of reproduction in *GA* I 17–18. Although the *locus classicus* for Aristotle’s views of inheritance is *GA* IV 3, the question of why offspring resemble their parents *first* arises in the context of Aristotle’s investigation of where *sperma* comes from (*GA* I 17, 721b6–13: Does it come from the whole body or from part of it, and does it come to be from both parents or only from one of them?), and it is here that Aristotle brings up familial resemblances that on my hypothesis can be explained only by a “material” account of inheritance.

A material account of inheritance

By a material account of inheritance, I have in mind a distinctly material mechanism that explains the resemblances between parents and offspring in their material natures and in the features depending on those material natures (such as eye color and hair structure), and that operates not via the successes and failures of the form-transmitting motions that are responsible for resemblances in the sizes and shapes of bodily parts, but—as is suggested by Aristotle’s discussions of inheritance in *GA* I 17–18—via, primarily, the mother’s blood. Let me explain my reconstruction of the

²⁴ On active versus potential motions and on relapsing, see further Henry 2006 (pp. 446–449).

mechanism involved in this type of “material inheritance” by turning to the relevant texts.

According to Aristotle, the defenders of the so-called pangensis theories of reproduction (i.e., those who claim that *sperma* is drawn off from the whole body and comes from both parents) produce several pieces of evidence, including the existence of certain types of familial resemblances; namely, that “from mutilated parents mutilated offspring are born” (*GA* I 17, 721b17–18) and that offspring are born “resembling their parents both with regard to their whole body and part for part” (*GA* I 17, 721b21–22). Ultimately, Aristotle wants to refute the view that *sperma* comes from the whole body, but his strategy is not to deny the evidence concerning familial resemblances. In fact, he characterizes them as plausible (*GA* I 17, 721b28: *πιθανὰ*; in *GA* I 17, 721b29–34, Aristotle even adds his own example of a tattooed man whose son is born with a mark faintly resembling that tattoo) and as needing to be explained (*GA* I 18, 724a3–7; cf. *HA* VII 6, 585b28–34). Instead, he considers additional evidence that causes problems or inconsistencies for pangensis theories, and that—by implication—a sound theory of reproduction should be able to explain. Two of these additional pieces of evidence point to the need of a theory explaining the existence of the inheritance of “material features” via a material mechanism, so let me discuss them in some detail.

First, Aristotle suggests that the view that *sperma* is derived from the whole body cannot account for the fact that resemblances are also found in “voice, nails,²⁵ hair, and gait, from which nothing comes” (*GA* I 18, 722a5–6; 722a6: *ἀφ’ ὧν οὐθὲν ἀπέρχεται*). Adding to these are features that parents do not yet possess at the time of procreation, such as gray hair or beards (*GA* I 18, 722a6–7), which according to Aristotle implies that offspring could not themselves develop gray hair as a result of having received “gray hair particles” or something like that from their parents. Both sets of parts, then, represent features from which nothing bodily can be derived that could be passed on to the offspring and are therefore problematic for pangensis theorists. However, although Aristotle himself never explicitly addresses this issue, it seems to me that these features are *also* problematic for Aristotle’s own account of inheritance as specified in *GA* IV 3. None of these features are part of the form of animals (whether one believes these forms to be universal or individual), meaning that they cannot be transmitted to the offspring through the form-transmitting motions present in the male and

²⁵ In *GA* I 18, 722a16–b3, Aristotle reiterates the point that familial resemblances are also found in uniform parts such as nails, even though they exist more in nonuniform parts such as faces and hands.

female *sperma*. As Aristotle explains elsewhere, parts such as nails and hair and features such as voice come to be due to material necessity and are not conditionally necessitated by the animal's form (the structures that arise by material necessity are used by nature for the good of the animal, but they do not come to be for the sake of that purpose).²⁶ They come to be during the last stages of embryogenesis or even postbirth during the later development of animals and are constituted entirely from earthy residues, which means that there is no soul and hence no sensation in them (and therefore, perhaps, no capacities from which the form-transmitting motions could be derived; *DA* III 13, 435a11–435b4, and *GA* II 6, 745a3–19). More importantly, even if these parts themselves *were* to be formal features of human beings, their attributes, in which the resemblances between parents and offspring are to be found, are not. Aristotle explicitly characterizes the *attributes* of parts such as hair and voice (together with the color of eyes) as being among the differences of the more and the less between animals that are *not essential* to them (unless they belong to a species as a whole, in which case they *may* be essential) and that are not present for the sake of something (*GA* V 1, 778a17–b19).²⁷ Instead, Aristotle explains that these attributes come to be “due to necessity” and “due to the material and the origin of motion” (*GA* V 1, 778a35–778b1; cf. *GA* V 3–6 on the attributes of hair and *GA* V 7 on those of voice). Hair, for instance, becomes straight or curly depending on the material potentials of the vapor inside of it, in combination with the effects of the outside environment on the hair: if the vapor inside the hair is smoke-like and therefore hot and dry, or if the outside air surrounding the hair is hot and dry, these material potentials cause the hair to twist and become curly, and this is why “Ethiopians and men in hot countries are curly haired, for their brains and the surrounding air are dry” (*GA* V 3, 782b18–783a1).²⁸ The familial resemblances that are found in the pitch of voice and in the color and texture of nails and hair (features that we identified in the previous chapter as signs in physiognomic contexts) must thus be due to *material* causation and to the properties of the material natures of the individuals in question. In order for Aristotle to be able to explain this kind of familial resemblance, he will thus

²⁶ See *PA* II 14, 658b2–10, and *GA* V 3, 782a20–24, on hair (with *PA* II 15 on eyebrows and eyelashes); *GA* II 6, 744b24–27 and 745a1–4, on hair, nails, and hoofs; *PA* IV 10, 690a4–9, on nails and hoofs; and *DA* II 8, 420b13–22, on voice. All these features are products of what I call “secondary teleology”; see Leunissen 2010.

²⁷ On Aristotle's explanation of this type of attributes in *GA* V, see Leunissen and Gotthelf 2010 (pp. 325–356).

²⁸ On the attributes of hair not being due to the human form and therefore not being transmittable by form-transmitting motions, see Gelber 2010 (pp. 188–189).

have to postulate the existence of an additional mechanism of heredity that does not rely on the successes or failures of the form-transmitting motions in the male and female *sperma*.²⁹

Second, Aristotle argues that the view that *sperma* is derived from the whole body also cannot account for cases where the offspring resembles their more remote ancestors, since nothing came from their bodies in the reproduction process (GA I 18, 722a7–8; 8: κασιν ἀφ’ ὧν οὐθὲν ἀπῆλθεν). He states that “similarities are displayed over many generations” and provides as evidence an anecdote about a woman from Elis who slept with a man from Ethiopia: their daughter was fair skinned, whereas the son of that daughter “was Ethiopian” (GA I 18, 722a8–11; cf. HA VII 6, 585b36–586a4, for a similar anecdote about the resemblance in dark skin color skipping a generation). As in the case of voice, nails, and hair that I discussed above, the specific anecdote Aristotle presents here provides a problem not only for pangenesis theorists of reproduction but also for his own theory of inheritance that builds on the form-transmitting motions. Skin color is most likely an accidental, nonessential attribute of human beings, just like the color of their eyes and hair is,³⁰ and therefore it also cannot be transmitted by the form-transmitting motions present in the male and female *sperma*.

These kinds of familial resemblances pertaining to the color of bodily parts and the color and texture of earthy parts such as nails and hair must therefore, I think, be due to inherited similarities in the *material* nature between (at least one of the) parents and offspring. This means that the causes of their coming to be must be sought in the material properties of their *blood*, the main component of a living being’s material nature (the other component is the kind and amount of food it eats, which is subsequently concocted into blood). Aristotle’s account of this kind of resemblance in the material features between parent and offspring and thus, indirectly, of his theory of “material inheritance,” can be gleaned from his discussion of what *sperma* is and of what role it plays in reproduction, which is formulated in part as a response to the failures of pangenesis theories of reproduction (see GA I 18, 724b21–I 19).

²⁹ Pace Balme 1980 (pp. 1–4) and Gill 1989 (p. 125 n. 29), which conclude on the basis of the existence of this type of “material” familial resemblance in Aristotle that what is transmitted in reproduction must be individual forms that somehow include material accidents. For arguments against the postulation of such “radically individual forms,” see Witt 1985 and Gelber 2010.

³⁰ See *Meta* VI 2, 1026b35–36, on “white” being an accident of humankind, and GA V 6 on the skin color of animals and its correlation with the color of their hair and the properties of their material nature.

In contrast to the pangenesis theorists, Aristotle argues that *sperma* (which as often as not refers here both to the male and the female contributions to reproduction) is not that which is *derived from* all the bodily parts currently present in the parents, but instead “that whose nature it is to go to all of it” and to form and maintain all the bodily parts currently present in the parents (GA I 18, 725a21–23; cf. GA I 18, 724a14–17 and 724b21–22). Aristotle defines *sperma* not as a waste product, but as a natural residue; that is, as the last concoction of the useful residue of blood from which each of the parts of the body is formed, and it is this fact about the nature of *sperma* that explains the resemblance between parents and offspring (GA I 18, 725a24–27):

For it is more reasonable that the last part of the [material] that is going to it [i.e., the last concoction of the blood that is supposed to form and maintain the parts in the parents] and what is left over from such material [i.e., the residue of the materials not used up in the formation of the bodily parts of the parents and that is now identified as *sperma*] are *similar*, just as painters of portraits often have something left over that is similar to what was used up.³¹

According to this passage, the offspring resembles its parents simply because it is made out of the same “stuff,” which is matter that is left over from the production and maintenance of the bodies of its parents (cf. also GA I 19, 726b9–15, where Aristotle provides the same explanation for the existence of similarities between parents and offspring: “. . . it is clear that *sperma* is the residue from nutriment consisting of blood, which in its final stage is being distributed to the parts. And this is the reason why it has such great capacity—because the excretion of blood that is pure and healthy is also a form of being weakened—and the similarities that come to be in offspring to their parents is reasonable: for that which goes to the parts is similar to what is left over”). Note that at this stage of the discussion, Aristotle has not yet differentiated between the specific formal-efficient and material-causal roles played by the male and the female *sperma* in reproduction, and that—if Aristotle’s counterargument is to be successful—the similarities between parents and offspring referred to in these passages must be understood to include also the kind of “material” resemblances brought up by the pangenesis theorists.

³¹ εὐλογώτερον γὰρ ὅμοιον εἶναι τὸ προσιὸν ἔσχατον καὶ τὸ περιγιγνόμενον τοῦ τοιούτου, οἷον τοῖς γραφεῦσι τοῦ ἀνδρικοῦ πολλὰκις περιγίγνεται ὅμοιον τῷ ἀναλωθέντι.

As Aristotle goes on to explain (cf. *GA* IV 1, 766b8–14), the *sperma* provided by the male contributes nothing materially to the developing embryo (which is why some males do not even produce *sperma*: *GA* II 4, 738b11–18) but acts as a vehicle for the transmission of motions (*GA* II 3, 737a18–22):

And given that the *sperma* is a residue and is moved with the same motion (κίνησιν τὴν αὐτὴν) as that by which his body grows after the last nutriment has been divided, it—when it goes into the uterus—fixes and moves the residue of the female with the same motion (τὴν αὐτὴν κίνησιν) as that by which it happens to move itself [it] also [moves] it.

As Aristotle points out, the resemblance between the father and his offspring is primarily one in form, since the motions that shape the offspring are (in “the most natural” situation in which the male principle is not dominated by the female) *identical* to the motions responsible for the shaping of his father’s body. By contrast, the *sperma* or menses provided by the mother contributes the body and the material to the developing embryo: whereas any formal contribution from her part is determined entirely by the extent to which the male principle *fails* to dominate her menses (her *sperma* “is in potentiality the same in quality as the body of which it is a secretion” and thus contains form-transmitting motions in potentiality: see *GA* II 4, 738b3–4, and *GA* II 5, 741b7–15), her influence on the material nature of her offspring is actually quite strong.

The female’s contribution to natural character

The mother might be the primary contributor to her offspring’s natural character, since not only does the developing embryo literally come to be from her own blood, she also continues to feed the embryo through the umbilical cord with her blood, thereby reinforcing the material resemblances between her and her offspring. This strength of the female principle in determining the material nature of the offspring turns out to be particularly apparent in the cross-breeding of animals (*GA* II 4, 738b20–36):

For the female always provides the matter while the male provides that which crafts it: for this is the capacity that we say each of them has, and this is what it is for them to be a female or a male. Therefore, it is necessary that the female provides the body and the body mass, while for the male it is not necessary. . . . And this is why among as many of those who cross partners that are not of the same kind (and crossing is possible among those whose pregnancies are of equal length and [whose conceptions happen] closely [around the same time],

and whose body sizes are not too far apart),³² the first [generation] comes to be in accordance with a common resemblance (κατὰ τὴν ὁμοιότητα . . . κοινὸν) to both [parents], such as the offspring of the fox and dog and of partridge and cock, but after time goes by and others come to be from others, *the final result is a shape in accordance with the female* (κατὰ τὸ θῆλυ τὴν μορφήν), just as foreign seeds [have a shape] in accordance with the soil: for this is what provides the material and the body to the seeds.

If my interpretation of Aristotle's response to the challenges raised by the pangenesis theorists in the *Generation of Animals* is right, the causes of familial resemblances in the material features between parents and offspring should primarily be sought in the properties of the mixture of the blood that the offspring receives from its mother, and in the extent to which these properties resemble either its mother's or its father's material nature. Even though it is the mother who provides the material for the offspring, the father—or more precisely the heat and the cold that are used by the male principle as its tools (*GA* II 4, 740b29–34)—is able to produce qualitative changes in the female menses, at least up until the point in time at which the embryo has developed its own heart and possesses its own natural heat.

In human reproduction this means that while all humans as a species have blood that is hot, moist, and pure compared to all other animal species (*GA* II 1, 732b27–32; *GA* II 4, 737b25–27; *Resp* 13, 477a15–25), an individual person's blood may be more or less hot, moist, and pure depending on the quality of the blood one receives from one's mother and on the qualitative changes produced therein during the process of concoction caused by the male principle. In this way, all the particular familial resemblances that Aristotle brought up in *GA* I 17–18 pertaining to the color and texture of hair and nails, the color of skin, and the pitch of voice can be traced back to the particular mixture of blood the offspring ends up having: if the mixture resembles that of its mother—in its parts or in its whole body—it will resemble its mother's features in those respects; if the mixture resembles that of its father, it will resemble its father's features. Of course, material natures are much less stable than formal natures. An individual's mixture of blood can be changed rather easily (within the spectrum of differences of the more and the less; one cannot change one's species-specific blood type) for shorter or longer periods of time due to changes in diet, the comings and goings of diseases, aging (which is essentially a process of cooling), and the influences

³² Cf. *GA* II 7, 746a30–32, where Aristotle adds that cross-breeding is possible between animals whose “natures are close and whose form are not very different.”

of the environment (*GA V* discusses many such examples; cf. also *Problems XIV*), and this may explain both why familial resemblances are much more likely to be found in the features that result from the operations of the form-transmitting motions and why there is a much-larger variety in material features within families and certainly within the human species as a whole.

Importantly, the particular mixture of blood that the offspring ends up having, as a result of its mother's blood and the qualitative changes therein produced by the father, *also* exerts considerable causal influence on the particular natural character traits that offspring has from birth. Again, although humans as a species tend to have hot, moist, and pure blood (in which case Aristotle characterizes their blood as perfectly balanced or well mixed, conforming to the human ideal) and therefore tend to be born with the natural capacities for courage and intelligence, individual differences of the more and the less in the properties of this mixture—as received at birth or as produced by external factors such as climate or diet—can cause one to be naturally disposed toward rashness or cowardice, or toward natural stupidity or above-average perceptual intelligence. Unfortunately, Aristotle never fleshes out his account of the inheritance of natural character traits in as much detail as I have provided in these last two paragraphs, nor does he return to it in his later chapter on heredity in *GA IV 3*. However, for what it is worth, it is this “material” account of inheritance that Galen claims to have found in Aristotle (*QAM 7*, 791.6–9; cf. also *QAM 7*, 795.11–14): “that Aristotle, too, believes that the soul's faculties depend on the mixture of the mother's blood, from which he says our own blood comes to be, is clear from what he says.”

Let me conclude this chapter, then, by making a final, speculative suggestion: it is this account of “material inheritance” Aristotle developed in response to the pangenesis theorists in *GA I 17–18* that provides the relevant background for Aristotle's views about “good birth” and eugenics in the *Politics*. Perhaps the closer the prospective parents are to their physical prime at the time of reproduction, the more well mixed the mother's blood will be and the more proportionate the father's heat will be, such that their offspring may end up being “truly fortunate”: it will be born male, with the kind of blood that is “well mixed,” and therefore will likely be the kind of man who is “most easily led to virtue by the lawgiver.”

CHAPTER 5 | Perfection and the Psychophysical
Process of Habituation

5.1 *Introduction*

Of the three factors—nature, habit, and reason—that play a role in the moral development of men, Aristotle singles out habit as the most important, since it is the process of habituation that is responsible for the production of the character virtues properly speaking and thus for the production of dispositions (ἕξεις) that allow one to be properly affected by pleasures and pains. In addition, it can also override nature and is needed to prepare the ground for moral education and thus for the third factor, reason, to play its role successfully.

Despite the fact that having certain natural character traits from birth can put a man further down the road toward virtue by making him naturally inclined in the direction of virtue and making him experience pleasure toward the actual good, Aristotle states in his *Politics* that “there is no advantage in simply being born with them” (*Pol* VII 13, 1332a42–b1: ἐνια δὲ οὐθὲν ὄφελος φῦναι) if there is no follow-up with the appropriate kind of habituation, because habit has the power to change these natural traits for the better or the worse (*Pol* VII 13, 1332a35–b1).¹ The forms of habituation (ἔθισμός) he discusses in that context as being productive specifically of the character virtues include practices such as bodily conditioning and exercise, imitations in play, and musical instruction during

¹ Note that Aristotle also claims that “habit is easier to change than nature” and that the reason why it is difficult to change habits is because they have become like nature, so while habit has the power to change nature, this is not always easy; Aristotle does not think it can or will be successful in every case. See *EN* VII 10, 1152a29–33.

childhood.² Aristotle’s discussion of the role of habit in moral development in the *Nicomachean Ethics* downplays the role of nature even more: in this work he famously argues that character virtues do not come to be by nature (for instance, in the way that humans realize their perceptive capacities),³ and he claims—just as in the *Politics*—that they are instead dispositions that we acquire “through habits” (*EN* II 1, 1103a17: ἐξ ἔθους)⁴ and “by first activating them” (*EN* II 1, 1103a31: τὰς δ’ ἀρετὰς λαμβάνομεν ἐνεργήσαντες πρότερον). According to the account provided here, individual character virtues thus come to be as the result of the repeated performance of virtuous actions, whereby the quality of the action is said to determine the quality of the disposition that comes to be (*EN* II 1, 1103b6–25). Together, the practices Aristotle mentions in the *Nicomachean Ethics* and the *Politics* as part of the process of habituation aim to change the natural character traits for the better and thereby improve the ways in which they produce feelings of pleasure and pain in response to perceptual input, such that the perceptual part of the souls of these men becomes correctly disposed toward undergoing the appropriate affections⁵ and becomes obedient to the rational part of the soul.⁶

On the other hand, Aristotle also emphasizes the preparatory role of habit for the third factor, reason, to be able to do its work, since he compares habituation with a form of “fine tuning” of people and with a kind of “permeation” or “inundation” of the soul, in a way that is similar to the preparation of land for seeds,⁷ which is necessary to make men receptive to arguments and lectures on ethics (*EN* X 9, 1179b4–31).⁸ Full virtue of character or moral virtue in the strict sense does not come to be without the acquisition of practical wisdom, and this is where the third factor, reason, comes in: once they reach the appropriate age, men need to receive moral education—presumably in tandem with their continued habituation—and possibly also be given the opportunity to gain experience in ruling (see *Pol*

² *Pol* VII 13, 1332b10–11; *Pol* VII 15, 1334b8–9; *Pol* VII 17, 1336a18–19; and *Pol* VIII 4, 1339a7–10.

³ See especially *EN* II 1, 1103a17–b2, and *EN* II 6, 1106a9–10: “we have the capacities by nature, but we do not become good or bad by nature.”

⁴ See also *EE* II 2, 1220a39–b1, and *MM* I 6.2.

⁵ *EN* II 3, 1104b11–13, and *EN* X 9, 1179b24–26; *Pol* VIII 5, 1339a20–25 and 1339a41–b4.

⁶ *EN* I 13, 1102b25–31; *EE* II 1, 1220a10–12, and *EE* II 2, 1220b6–8.

⁷ Cf. *Pr* XXII 11, 931a6–15, for this use of προδιεργάσθαι.

⁸ Burnyeat 1980 (p. 86), Hitz 2012 (pp. 263–266), and Moss 2011 (p. 239). See also *EN* I 13, 1102b26–1103a1; *EN* X 9, 1180a7–11; and *Pol* VII 13, 1332a38–b8.

III 4, 1277b25–26) in order to become practically wise and consequently virtuous in the strict sense.⁹

In this chapter, setting aside the question of exactly how one acquires practical wisdom, I focus on Aristotle's discussions of the role of habit and the process of habituation in the production of character virtues so as to provide an account of how this transformation from the natural character traits to the individual natural virtues—and hence, ultimately, to the unified psychological disposition that constitutes moral virtue in the strict sense—is supposed to work. Whereas Aristotle is fairly explicit about the scope, aims, and importance of habituation as a factor in moral development, the ethical treatises—perhaps because they are practical in nature—do not provide much information about exactly what happens in the bodies and souls of men during habituation and exactly how it has this power to change our natural character traits and to produce the character virtues.¹⁰ This chapter, then, aims to close this gap in our understanding of Aristotle's concept of habituation, by examining his remarks about the subject in the ethical treatises *from the perspective of* Aristotle's only extended discussion of the physical changes involved in virtue acquisition in *Physics* VII 3 (which is the only extended natural scientific treatment of the process of habituation in the corpus) and by offering an explanation of how these changes ultimately result in the presence of character virtue as a distinct and unified psychological disposition.

In doing so, I will approach habituation as an inextricably psychophysical process; that is, as a process that involves changes of the capacities belonging to (primarily) the *perceptive* part of the soul,¹¹ all of which are common to body

⁹ The role of this third factor—*logos*, traditionally translated as “reason”—in moral development falls outside the scope of this book. On this issue, see Moss 2014, which argues that *logos* in this context should be understood as a prescriptive, explanatory account that provides the “why” for moral action: it states *that* some action is good and also explains *why* it is good. On this account, the correct *logos* that turns the natural virtues into strict character virtue is a correct practical syllogism. Practical wisdom, according to Moss, is the capacity that enables one to deliberate correctly and to produce correct practical syllogisms as well as to grasp such correct practical syllogisms.

¹⁰ Cf. Tracy 1969 (p. 23): “[Aristotle] presents the physiological and psychological aspect of moral activity, therefore, only insofar as that is necessary to the practical moralist”; Reeve 1992 (p. 61): “What we cannot do is explain why it is that changing desires, our own or other people's, typically involves a lot of repetition and really hard work. . . . There is an explanation of these facts, no doubt, but ‘we must hear it from the natural scientists’ (1147b8–9), not from philosophers”; and Hursthouse 2006 (p. 112): “But how do we get from the early tuning of toddlers’ passions to the enjoyment of fine actions? . . . ‘Habituation,’ Aristotle tells us, but, as everyone notes, he tells us little about what this involves.”

¹¹ For Aristotle's conception of the human soul as consisting of three conceptually distinct parts (i.e., the nutritive, perceptive, and thinking parts, each of which can be defined independently of any of the other parts), and each of these parts consisting of a set of capacities (each of

and soul and therefore cannot be completely understood if treated either as a purely psychological process or as a purely physiological process.¹² As we saw in the previous chapters (and as will become clearer in my account below), the role of character traits—whether natural or habituated—in humans, according to Aristotle’s (moral) psychology, is to mediate causally between practical perceptions (the sensory “input” relevant for moral action on the one hand) and feelings of pleasure and pain (the emotional “output” on the other hand),¹³ such that the courageous person, for instance, experiences the appropriate level of fear and courage in the face of danger because he can “see” and respond correctly, while the cowardly person experiences an excessive level of fear and a lack of courage in the face of that same danger because his cowardliness exacerbates the perceived threat and the emotional response to it. These responses are chronologically and causally followed by nonrational desires to pursue or avoid, such as the appetitive desire to move closer to a meal that appears pleasant or the epithumetic desire to move away from a dangerous-looking enemy. These latter desires produce heatings or coolings of the blood, which in turn make the *pneuma* that is present in the body expand or contract and thereby move the body and its parts.¹⁴ Feelings of pleasure and pain, as well as the nonrational desires, all are affections of the soul according to Aristotle that belong to its perceptive part, and he considers such affections “enmattered structures” (*enhuloi logoi*) and therefore as inseparable

which can be defined only with reference to the part it belongs to), see Corcilius and Gregoric 2010 and my discussion of Aristotle’s moral psychology in section 5.4.

¹² See especially the accounts in Charles 2009b and Charles 2011a of desire and emotions in Aristotle as “essentially and inextricably psychophysical.” As explained in Charles 2011a (p. 83), for Aristotle, affections of the perceptive part of the soul: “are ‘common to body and soul’ in a particularly demanding way. The relevant processes are inseparable in definition into two separate components. There is not one (definitionally) separable purely formal process to which can be added another definitionally distinct physical (or bodily) process, both making (definitionally) separable but individually necessary contributions to the outcome. Rather, the relevant process is indissoluble in definition into two such components. Even when considered as a ‘formal’ process, it cannot be defined except in terms which essentially involve matter.”

¹³ The relation between Aristotle’s account of pleasures and pains and of the emotions more generally speaking is complicated. He often characterizes emotions and passions of the soul as being “followed” by pain or pleasure, which minimally means that whenever there is an emotion there is also a feeling of pleasure or pain associated with it, or perhaps, as Dow 2011 proposes, that the feelings of pleasure and pain are *essential* to being an emotion and that for Aristotle, therefore, emotions are states of pleasure, pain, or both, directed at certain supposed states of affairs, usually focused on some object. In my account above, I focus on the feelings of pleasure and pain, since those feelings feature centrally in Aristotle’s definition of the goals of habituation, but if Dow is right, it will cover emotions as well.

¹⁴ On the role of *pneuma* in Aristotle’s account of animals as self-movers, see Berryman 2002.

from the physical matter of living beings (*DA* I 1, 403b17–27). Anger, for instance, is a “boiling-of-the-blood-type-desire-for-revenge-after-pain-felt-at-a-supposed-slight.”¹⁵ On this account, habituating oneself to become patient or good tempered (and thus to acquire the stable disposition to feel anger to the appropriate degree for the things that one should and at the times one should, etc.) requires one to repeatedly try to hit the mean between excess and deficiency between irascibility and lack of spirit. And one is supposed to do so while performing good-tempered actions and while learning to enjoy these actions in the right way, and thereby to undergo the prerequisite psychophysical changes. And because these changes are not “merely psychological”—that is, because they cannot happen or be understood independently from the physiological processes that are essential to them—those who do not have the kind of well-mixed blood that is best for moral development probably do well also to follow certain physical or dietary regimens that promote purity of blood and ensure one’s level of *thumos* to be appropriate and controllable, since changes in intentional content are also at the same time changes in boilings of the blood, for example, such that if one’s blood is impure and has lots of earthy elements and one’s level of *thumos* is excessive, the slightest boiling could result in irascibility.

Finally, let me note from the outset that the discrepancies between Aristotle’s ethical and natural scientific accounts of habituation are significant, but that it is not my aim to harmonize the two accounts in all respects. Rather, I use Aristotle’s discussion in *Physics* VII 3 as a starting point for what I take to be a plausible, “Aristotelian” account of the psychophysical workings of habituation. Starting in section 5.2 below, I first briefly examine the three main claims Aristotle makes regarding virtue acquisition in *Physics* VII 3; namely, that (1) their acquisition is a case of “perfection” (and not of generation or alteration), (2) character virtues belong to the category of “relation” (and not to that of quality), and (3) their acquisition “always occurs with” the alteration of the perceptive part of the soul.¹⁶ In section 5.3, I offer

¹⁵ I here combine Aristotle’s treatment of anger in *Rh* II 2, 1387a30–b9, with Dow’s interpretation that brings out anger’s essential connection with pain (see Dow 2011, pp. 56–58) and Aristotle’s definition of anger in *DA* I 1, 403a24–31 with Charles’s interpretation that brings out the essential connection of anger with a particular type of physiological process (see Charles 2011a, pp. 77–81).

¹⁶ In writing this section I have benefited much from Maso et al. 2012. I have also relied on Maso and colleagues’ edition of the Greek text of *Physics* VII 3, which has been transmitted in two different versions—version α , which is the version printed in Ross 1950, and version β , which is the version known by Simplicius, Philoponus, and Themistius. My discussion focuses on version α but also draws from version β where relevant.

suggestions for how this “natural scientific” account of perfection can be applied to Aristotle’s characterization of habituation in the ethical treatises, and I present a reconstruction of the various types of change involved in habituation mentioned there. And finally, in section 5.4, I will use this evidence from the ethical treatises to make sense of Aristotle’s second and third claim in *Physics* VII 3 and to provide an account of the changes that occur in the perceptive soul of men during habituation.

5.2 *The Acquisition of Character Virtue in Physics VII 3*

In *Physics* VII 3, Aristotle provides one of the lengthiest discussions of the physical process of virtue acquisition in his corpus. However, the main purpose of the chapter is to defend a rather-restricted notion of alteration, which Aristotle needs in order to save his earlier argument against kinetic infinity. This argument, which is developed in *Physics* VII 1–2, builds on the premise that every change requires contact between the origin of change and the entity undergoing that change. However, in *Physics* VII 3 Aristotle brings up two examples of change—both within the category of alteration—that appear to violate this requirement of contact: namely, the change that items undergo when taking on or casting off figures or shapes, and the change that items undergo when taking on or casting off dispositions (*hexeis*). Aristotle’s strategy in dealing with these two alleged counterexamples is, first, to redefine *all* alteration as change in perceptual qualities *only* (245b3–5), thereby restricting alteration to changes in the “affective qualities and affections, such as hotness and coldness” (which constitute the third type of quality as defined in *Cat* 8, 9a14–10a10).¹⁷ And next, he shows that the two alleged counterexamples are not really cases of alteration at all. The bulk of the chapter deals with the second example; that is, the acquisition and loss of dispositions both of body and soul (see 246a10–248a9; the example of figures and shapes is discussed in 245b6–246a9), with dispositions being immediately identified with virtues and vices (246a11–12). The subsequent discussion then focuses on the acquisition and loss of these virtues and vices (first those of body, next those of soul), and it is in this context that Aristotle discusses the acquisition of the character virtues. In what follows, I discuss Aristotle’s account of the acquisition of virtues of the body (in 246b4–20) and that of the acquisition

¹⁷ *Categories* 8 discusses three more types of quality: states and conditions, natural (in)capacities, and shapes and forms.

of character virtue (in 246b21–247a19) together, because the two accounts are very similar.¹⁸

As stated above, Aristotle begins his demonstration of the proposition that the acquisition and loss of dispositions are not cases of alteration by identifying these dispositions with virtues and vices, perhaps because, in the case of living beings, *every* disposition makes its possessor either well disposed or ill disposed.¹⁹ On the basis of this identification, Aristotle argues that since virtues and vices are not alterations but kinds of *perfections*, dispositions of the body and soul—and their acquisitions—are also not alterations (246a12–b3). Subsequently, he argues that virtues and vices belong to the category of *relation*, thereby reaffirming that their acquisition or loss cannot be a change in the category of quality (246b3–4). Aristotle then works out these two arguments with regard to virtues and vices of body and of character, while—also in both cases—adding a third argument about how, although their acquisition is not itself an alteration, virtue acquisition always occurs “with” an alteration of something else. Let me discuss these three arguments in turn.

The first argument identifies virtues and their acquisition with “perfections,” while identifying vices and their acquisition with “departures” (246a13–17):

But rather virtue is a kind of perfection (τελειωσις τις)—for when it acquires its own virtue (τὴν αὐτοῦ ἀρετήν), then we say that each thing is perfect, for then it is most in accordance with [its] nature (τότε γὰρ ἔστι μάλιστα [τὸ] κατὰ φύσιν), just as a circle is perfect when it has become a circle in the highest degree and when it is best—and vice is a destruction of this and a departure [from this].

According to this account, which applies equally to virtues and vices of the soul (246b21–247a3), acquiring a virtue is reaching a form of perfection according to which its possessor now exhibits its own nature to the highest degree or in the best way, while acquiring a vice is degenerating from one’s nature. Aristotle uses the perfection of houses as an example

¹⁸ The section concerning the intellectual virtues (247b1–248a6) falls outside the scope of this chapter; on this, see de Haas 2012 (pp. 99–108) and Natali 2012 (pp. 109–117).

¹⁹ See *Meta* V 20, 1022b10–12. For the sake of this argument, Aristotle must assume that *all* dispositions—and not just those of body and soul—are either virtues or vices. However, elsewhere he also refers to virtues as conditions (*diatheseis*—a term that is perhaps exchangeable with *hexis* in discussions of virtue; see Bowin 2011 p. 147, n. 21), and possibly to dispositions of lifeless things that are neither virtues nor vices (see, e.g., *DA* II 7, 418b18–20, and *DA* III 8, 432a5–6). On this, see further Coope 2012 (pp. 59–61).

(246a18–246b1): evidently it would be “absurd” to call the coping and tiling of houses alterations rather than perfections, and so the acquisition of virtues (or vices) by living beings should also be called perfections (or departures) and not alterations.

What *exactly* is entailed by such a process of perfection is unclear, but the house example seems to associate perfection with a teleological process of generation. Thus, perfection may either refer to (1) the *final stage* of such a process, as suggested by “coping,” since, strictly speaking, houses do not exist without the last (course of) brick(s) being in place yet, so that coping could not be a case of alteration simply because the subject of alteration does not yet exist. Or (2), as suggested by the comparison with “tiling” (and by the example of the circle), perfection may refer to a change of something that has already reached its final stage of generation (e.g., the house and circle already exist, but perhaps imperfectly so), but that is now made to *express its own nature to the highest degree*. The latter is not a case of alteration, since the subject does not come to possess any new attributes.²⁰ This second reading, which I think is the more plausible one, also fits best with Aristotle’s characterization of perfection in version β (246b27–29):

For virtue is a kind of perfection—for each thing is then most perfect (μάλιστα τέλειόν) when it reaches its proper virtue (τῆς οικείας ἀρετῆς), and is most in accordance with nature, just as a circle is then most in accordance with nature when it is most a circle.

In this version, it is clearly not the generation of the circle that is at stake, but rather the *degree* to which it exhibits its own nature: by being a circle *most*, it is said to be most perfect and to reach its “proper virtue.” Similarly, in Aristotle’s definition of perfection in *Metaphysics* V (16, 1021b14–1022a3), a being—such as a physician or a flute player—is called perfect when “with respect to its kind it lacks nothing of its proper virtue” (b16–17: ὅταν κατὰ τὸ

²⁰ Although the kinds of perfections of living beings Aristotle refers to here are achieved by nonnatural means, natural perfections similarly appear to fall into two distinct classes: usually Aristotle uses the term “perfection” to refer to the completion of a natural teleological process of generation or maturation (see, e.g., *GA* II 5, 741b5–6, and *GA* IV 7, 775b37–776a6, about embryological development, and *Meteor* IV 2, 379b17–23, about concoction as a kind of perfecting that results in generation; cf. Lloyd 1996b, pp. 83–84 and 101). Sometimes, however, Aristotle uses it to refer to a process of betterment or improvement of an already existing being: see, e.g., *GA* IV 8, 776a31–b2, about embryos growing and thereby being perfected after they have already reached their end in the sense of being physically complete, and, perhaps, *Pr* X 36, 894b27–33, where the perfection reached by mature men and women is compared to nobility.

εἶδος τῆς οἰκείας ἀρετῆς μὴτὲν ἐλλείπωσιν) and when it “lacks nothing with regard to goodness and cannot be excelled and has nothing that is found outside it” (b31–32: τῷ κατὰ τὸ εὖ μὴδὲν ἐλλείπειν μὴδ’ ἔχειν ὑπερβολὴν μὴδὲ ἕξω τι λαβεῖν). Again, what is at stake in this definition is not whether something has already realized its own nature or not (the examples refer to people who are already practitioners of their crafts, not students in training), but rather whether it has realized it well or badly, with perfection picking out the condition of that which could not have realized its nature better—it lacks *nothing* of its proper virtue and *cannot* be excelled. Hence, something is perfect not only when it has everything that is necessary for it to be what it is (that is, for it to be a normal functioning member of its class), but also when it possesses those things in the best possible condition, such that their interplay and combination make it unsurpassable in excellence.²¹

Aristotle’s second argument places the virtues and vices of body and character in the category of relation (as in 246b3–4 and 247a1–4, and not in the category of quality as is suggested in the *Categories*),²² since they all satisfy the following two criteria (246b8–9):²³ first, “each . . . is in [the category] of relation” (ἐκάστη . . . ἐστὶ τῷ πρὸς τι), and second, “[each] puts what has it in a good or bad condition (εὖ ἢ κακῶς διατίθησι) regarding its proper affections,” where “proper” is understood as picking out those affections that naturally produce or destroy that which is being affected. And, because there are no changes of relations properly speaking (instead, the items that are part of the relation change and thereby change the relation between them, but this is not a change of the relation itself), the acquisition or loss of these virtues or vices is not an alteration (246b10–14).

Unfortunately, Aristotle does not specify what components are constitutive of the kind of relation that qualifies as character virtue. Perhaps the analogy with the relational nature of health and fitness (246b4–6) is helpful here: according to Aristotle, health and fitness are placed “*in* the mixture and due proportion of hot and cold [elements]” (ἐν κράσει καὶ συμμετρῖᾳ θερμῶν καὶ ψυχρῶν), which exist either in relation to themselves, internally in the

²¹ Cf. Coope 2012 (pp. 69–71) and Strohl 2011 (pp. 284–285).

²² See *Cat* 8, 8b27–29. The *Categories* lists the *genus* of dispositions and virtues in the category of relation, but the *particular* dispositions or virtues as qualities: see *Cat* 7, 6b15–16, and *Cat* 8, 11a20–36.

²³ The Greek leaves open the possibility that only one of the two criteria needs to be satisfied in order to classify as a relation, but other evidence suggests that health at least requires both: see Freudenthal 1995 (p. 13).

body, or externally in relation to the mixture of the environment.²⁴ So, apparently, bodily virtues and vices are either *nothing more* than elements that are in some way related to something (as is suggested in version β, 246b21–22: “just as health is a kind of symmetry of hot and cold [elements], either with what is internal or in relation to the environment”), or they are *ontologically dependent* on those relations without being identical to them.²⁵ In either case, it seems that if character virtues are relational *in a way that is similar* to the way bodily virtues are relational (as is indicated by ὁμοίως in 246b20), then perhaps character virtues, too, should be “placed in” or even identified with a mixture and due proportion—not of bodily elements—but rather of “elements” of the soul.

The third argument for why the acquisition and loss of virtues or vices are not alterations claims that this miscategorization is due to the fact that their generation and perishing necessarily always involves *the alteration of something else*. Bodily virtues and vices are said to come to be when the bodily elements in which these states are placed are altered (246b14–20). The account concerning character virtues is more complex, so let me quote it in full (247a6–19):

But it is necessary that they come to be when the perceptive part [of the soul] is altered (ἀλλοιουμένου τοῦ αἰσθητικοῦ μέρους). And it will be altered by perceptibles. For every character virtue concerns pleasures and pains of the body, and these [occur] in acting or in remembering or in expecting. The ones that occur in action are in accordance with perception, such that they are being moved by something perceptible; the ones that occur in memory and in expectation [come] from this: for either the ones who remember what they have experienced or the ones who expect what they will [experience] feel pleasure. Therefore, it is necessary that every such pleasure comes to be through perceptibles. Since when pleasure and pain come to be [in the soul] also vice and virtue come to be (for they [i.e., vice and virtue] concern them [i.e., pleasure and pain]), and pleasures and pains [are] alterations of the perceptive part, it is clear that when one undergoes some alteration one necessarily also loses or acquires those [vices and virtues]. Therefore, there is a coming to be of them with alteration, but they themselves are not alterations.

²⁴ See also *Ph* IV 3, 210b22–27: “What Zeno is puzzled about, that if there is a place, it must be in something, is not difficult to solve. For nothing prevents the first place from being in something else, however not as in that place, but *as health is in the hot elements as a state* (ὥσπερ ἡ μὲν ὑγίεια ἐν τοῖς θερμοῖς ὡς ἕξις), and [as] heat [is] in the body as an affection.”

²⁵ Bodnár 2012 (pp. 75–77).

In short, Aristotle argues that when the perceptive part of the soul—in which, presumably, the character virtues are present as relations—is affected by pleasures and pains (which are themselves produced by sense perception) and is thereby altered,²⁶ character virtues or vices are acquired or lost.

As this overview brings out, Aristotle's remarks about the nature of virtue acquisition in *Physics* VII 3 are very condensed. Moreover, it is unclear to what extent this account of virtue acquisition as a form of perfection applies to his treatment of habituation in the ethical treatises, where—at least *prima facie*—virtue acquisition appears to be a kind of qualitative change, and the language of perfection does not play any substantial role. In what follows, I discuss Aristotle's treatment of perfection and the process of habituation in the ethical treatises, and I show that for the most part, it is quite congenial to what has been deemed to be an “excessively physiological”²⁷ account in *Physics* VII 3, and that these materials together can be used to offer a rich picture of what happens psychophysically when men who are born with good natural character traits and are raised in the right kind of city habituate themselves under the guidance of capable lawgivers and just laws.

5.3 *Perfection and the Psychophysical Process of Habituation in the Ethical Treatises*

In the ethical treatises, the view that the acquisition of character virtues through habituation is a kind of *perfection* that results in men who not only are biologically complete and functional but also have reached their proper virtue and are therefore *most* in accordance with their human nature is never developed in much detail.²⁸ However, as will become clear below, it is nonetheless present and fitting with the account in *Physics* VII 3, and, furthermore, its conceptualization in the ethical treatises provides additional insights into the psychophysical process of habituation and into how it produces character virtue. Since the *Nicomachean Ethics* presupposes the student of ethics

²⁶ This characterization of pleasures as alterations of the perceptive soul seems to clash with Aristotle's account of pleasures as perfections of activities in *EN* X 4, 174b31–33; on this, see Wardy 1990 (pp. 224–225), which suggests that the former is a simplification of a more complex theory of pleasure that is not relevant in *Physics* VII 3.

²⁷ See Ross 1936 (p. 676), Viano 2012 (pp. 89–93), and Wardy 1990 (pp. 223–227).

²⁸ The conceptualization of habituation as a form of perfection is, however, worked out in detail by Aquinas, who adopted it from Aristotle: see Irwin 2006 (pp. 332–335).

to have had the kind of upbringing that is outlined in the *Politics*, I start my account with the latter.

Habituation in the *Politics*

In the *Politics*, the view that habituation is a form of perfecting men surfaces in Aristotle's discussion of the tasks of lawgivers in the ideal city. One of the most important of these tasks is the proper habituation and education of children who would otherwise remain imperfect both in their deliberative capacity and in the development of their character virtues (*Pol* I 13, 1260a13–14 and 1260a31–33; a31: ὁ παῖς ἀτελής) and would not be able to contribute to the virtue of the city. Accordingly, Aristotle claims that the educational program should follow the natural division of the development of boys rather than the traditional division into seven-year periods, since “it is the purpose of every craft and [every] education to complete what is lacking in nature.”²⁹ This characterization of education suggests that Aristotle sees the role of political science as a form of helping men to complete their human nature and thereby to realize it to the fullest.

Completing, in this context, is presumably a form of “perfecting,” since this cannot be achieved by nature alone³⁰ (Iamblichus *Protr* IX 49.28–50.12):

For nature does not imitate craft, but it nature, and it exists to help also complete those things nature leaves out (τὰ παραλειπόμενα τῆς φύσεως ἀναπληροῦν). For some things, nature itself seems capable of bringing to perfection (ἐπιτελεῖν) by itself without actually needing any help, but others it [brings to perfection] with difficulty or is completely unable to do; for example, to begin with, even with reproduction, some seeds presumably germinate without protection, whatever kind of land they fall onto, [while] others also need the craft of farming, and, in a similar way, some animals also attain their full nature by themselves, but humans need many crafts for their security, both at first in respect of their birth, and again later, in respect of their nurturing. . . .³¹

²⁹ *Pol* VII 17, 1336b40–1337a3 (1337a2–3: τὸ προσλείπον . . . τῆς φύσεως ἀναπληροῦν). Cf. *EE* VII 2, 1237a2–3 (“ . . . and political [craft] exists for that purpose, such that it produces this [i.e., harmony between what is good without qualification and what is good for the individual] in those in which it is not yet present”) and Aristotle's eugenic program in *Pol* VII 16, discussed in chapter 4, which is designed to help avoid the natural occurrence of imperfections in offspring.

³⁰ Reeve 2012 (p. 104). Cf. *Ph* II 3, 194a21–27, and *Ph* II 8, 199a15–17.

³¹ Translated in Johnson & Hutchinson 2005 (p. 259); slightly modified.

Just like farmers, who take seeds that are available by nature but protect and cultivate them so as to assure their (regular) growth, lawgivers receive humans from nature (cf. *Pol* I 10, 1258a21–24) and build cities to protect them and provide laws and educational programs to assure they attain their “full nature” on a regular basis and by choice. The aim of habituation, then, is to complete or perfect nature by instilling the proper virtues in men and thereby producing a kind of “second nature” in them that replaces the imperfect and unstable one they have from birth.³² Aristotle does not specify the changes produced in men during this early process of perfection brought about by habituation, but his discussion of the educational program of boys in the ideal city in Books VII–VIII of the *Politics* includes several components that imply some kind of psychophysical change: conditioning, imitations through play, and musical education. Aristotle’s recommendations regarding each of these three components of the educational program for young men are as follows.

First, since habituation should track the order of the natural development of the bodies and soul parts of boys,³³ Aristotle stresses the importance of bodily exercise and conditioning straight from birth. Aristotle’s first recommendation is the following (*Pol* VII 15, 1336a12–21):

It is beneficial, too, to habituate (συνεθίζειν) children immediately from the time they are small to cold circumstances: for that is most useful with a view both to health and to military practices. For this reason, it is a habit (ἔθος) among many of the barbarians to submerge newborns in the cold river, while others dress them with very little clothing, such as the Celts do. For as many things there are concerning which habits can be created, it is better to habituate [children] immediately from the beginning, and to habituate them gradually (ἐκ προσαγωγῆς δ’ ἐθίζειν). And the disposition of children, because of its heat, is naturally suited for training against the cold.

Thus, by exposing newborns up until the age of five years to particular environments, diets, and motions, lawgivers—via the children’s parents—condition primarily the bodies of the offspring for health and (military) strength and aim to prevent laziness or deformity (*Pol* VII 17, 1336a25–39,

³² See, e.g., *Rh* I 11, 1370a5–9; *Mem* 2, 452a27–30; and *EN* VII 10, 1152a29–33: “For it is easier to change one’s habit than one’s nature, and because of that it is also difficult [to change] habit, because it is like nature, just as also Evenus says: ‘I say that it is long-lasting practice, my friend, and this in the end is nature for human beings.’”

³³ See *Pol* VII 15, 1334b10–29: Habituation should focus first on bodies, then on training appetite and desire for the sake of the capacity of understanding.

with *Pol VIII 2*, 1337b5–15). Presumably, the main purpose of this type of conditioning is to instill the bodily virtues, and it is something that continues to be promoted during the ages of seven to seventeen years.³⁴ However, these practices are also said to promote natural courage (consuming milk, for instance, produces “a military disposition,” perhaps by temporarily increasing the heat of the blood: see *Pol VII 15*, 1336a3–8) and possibly also alter the appetitive capacities of the soul by conditioning boys to certain behaviors and affections, such that, as in the example quoted above, they no longer experience exposure to cold temperatures as something painful, having been dipped in cold water repeatedly from the beginning.

It should be noted that this kind of habituation, which involves the creation of physical conditions that are conducive to health, survival, and natural courage, and which is a necessary prerequisite to the development of the character virtues (*EN X 9*, 1179b4–31), has close parallels in the animal world, where habituation is a rare but not entirely uncommon phenomenon. As Aristotle points out (*Pol VII 13*, 1332b3–4), “[nonhuman animals] live mostly in accordance to nature, but in some minor respects also in accordance to habits” (μικρὰ δ’ ἐνια καὶ τοῖς ἔθεισιν). His *History of Animals* provides ample examples of this type of habituation. For instance, Aristotle observes that the seal “brings its children, when they are about twelve days old, often during the day, to the sea, habituating them little by little” (*HA VI 12*, 567a5–7; 6–7: συνεθίζουσα κατὰ μικρόν), much in the way that human babies are being habituated by being dipped into cold water. Animals also make use of repeated actions to instill a certain type of behavior in their newborns: the hind, for instance, “brings its children to the lair, habituating them to the place where it is necessary to take their refuge” (*HA IX 5*, 611a19–21; 20–21: ἐθίζουσα οὐ δεῖ ποιεῖσθαι τὰς ἀποφυγὰς), and “swallows teach their young when they have grown up [a bit] to turn around and to drop their excrement over the edge of the nest” (*HA IX 7*, 612b29–31; b31 διδάσκουσι τοὺς νεοττοῦς). Shepherds and herdsmen make use of the fact that animals can be habituated in this way: for instance, shepherds train one of their rams for bellwether from a young age (*HA VI 19*, 573b25–27; b27: συνεθίζουσι δὲ τοῦτο δρᾶν ἐκ νέων), herdsmen tame castrated bulls so that they can lead the herd (*HA VI 21*, 575a33–b2), and shepherds train sheep to close in together at the clap of their

³⁴ From seven to fourteen years old, boys engage in light gymnastics (*Pol VIII 4*, 1338b40–42) for the continued promotion of courage, health, and strength (*Pol VIII 3*, 1337b27, and *Pol VIII 3*, 1338a19–20), and from fourteen to seventeen years old, they combine their physical training with a strict diet (*Pol VIII 4*, 1339a4–7). Excessive physical exercise should always be avoided because it leads to ferocity (*Pol VIII 4*, 1338b9–38).

hands such that “whenever there is a sound, they close together in their flock because of their habit” (*HA IX 3*, 610b33–611a2; 611a2: διὰ τὸ ἔθος). In sum, at *this* stage in their development, human children—and especially their natural personality traits—are not that much different from animals: their appetitive souls are very much alike during this phase, although, of course, the “seeds” of the natural character traits that human children have can be developed further and will be able to reach higher levels of perfection.³⁵ In addition, the distinction between these forms of “natural habituation” and the program of habituation that is supposed to produce the best citizens of ideal cities (and the kind of audience that is ideal for the lectures preserved in the *Nicomachean Ethics*) is still rather blurry: most of the barbarians are using the right kind of practices concerning the conditioning against the cold of their newborns, even though they lack the right kind of political organization and have no conception of the actual good.³⁶

A second process involved in the early habituation of boys within the household is that of *imitation* through play.³⁷ Children not only should be exposed to morally good examples (whether in the form of behavior, speech, or artistic representation) while being protected from bad ones, but also need to be encouraged to imitate those good examples. For instance, children should perform those actions in play that are imitations (μιμήσεις) of the serious actions they will perform later in life (*Pol VII 17*, 1336a33–34). Because imitations are naturally pleasant to humans, imitation is a natural mode of learning for them (*Poet I 4*, 1448b5–24; cf. *Rh I 11*, 1371b5–10), and it is especially suited for the habituation of children, who easily translate what they see and hear into action (*Pol VII 17*, 1336b2–8). Through imitative play, children are encouraged to reinvolve their perceptions of the actual goods presented to them via imagination—a practice that, perhaps, sharpens their discriminative ability to perceive the actual good as good³⁸—and to take pleasure in the performance of those good actions: imitation thus shapes

³⁵ *HA VIII 1*, 588a31–b3 (a33–b1: διαφέρει δ’ οὐδὲν ὡς εἰπεῖν ἢ ψυχὴ τῆς τῶν θηρίων ψυχῆς κατὰ τὸν χρόνον τοῦτον).

³⁶ I owe this point to Thornton Lockwood. See also *Pol VIII 4*, 1338b9–35, where this distinction between “natural habituation” and a program of habituation developed with an eye to developing the right kind of virtues is first thematized in Aristotle’s critique of the Spartans for focusing too single-mindedly on the military training of their men.

³⁷ The habituation of boys within the household typically lasts until the age of seven years (*Pol VII 17*, 1336b1–2), after which their education becomes a communal matter (*Pol VIII 2*, 1337a33–40).

³⁸ Perception is a causal factor involved in action (*EN VI 2*, 1139a17–18), and virtue requires one to be able to perceive the actual good as being good for oneself (*EN III 4*, 1132a29–33, and *EN*

the preferences of boys by making them enjoy—and love (see: *Pol* VII 17, 1336b33)—the performance of virtuous actions.

The third process involved in habituation is (presumably)³⁹ part of the education of boys from age seven to fourteen: in addition to performing gymnastics and being educated in letters and drawing, students are to receive *musical education*.⁴⁰ Aristotle argues that education in music prepares boys for the proper enjoyment of leisure later in life, once they have become morally perfected men,⁴¹ but he also suggests—and later endorses that this is indeed the case (*Pol* VIII 5, 1340a1–12)—that music is productive of character virtues (*Pol* VIII 5, 1339a20–25):

Or should we rather think that music contributes something to virtue, on the grounds that—just as gymnastics prepares our body to be of a certain quality—so too, music is capable of making our character of a certain quality (τὸ ἦθος ποιὸν τι ποιεῖν), by habituating us to be able to enjoy things in the right way (ἐθίζουσιν δύνασθαι χαίρειν ὀρθῶς).

Apparently, education in music—which involves being trained both as audience and, up to a point, as a performer (*Pol* VIII 6, *passim*)—is capable of producing positive alterations in human character traits (cf. *Pol* VIII 5, 1339a41–42: εἰ δύναται τὰ ἦθη βελτίω ποιεῖν) and thereby helps produce character virtue. And, Aristotle claims, music does not only make men able to *enjoy* things in the right way, it also makes them able to *judge* in the right way, where the objects of enjoyments and judgments are not just music itself, but also “appropriate characters and good actions” (*Pol* VIII 5, 1339a41–b4 and 1340a14–18; cf. *Pol* VIII 6, 1340b38–39). In this way, habituation through

III 5, 114a31–b20). On practical perception, see further Moss 2011 (pp. 251–254) and Reeve 2012 (pp. 40–50).

³⁹ Reeve 2012 (p. 254).

⁴⁰ On the importance of musical education as part of a program of habituation that teaches young men to enjoy virtuous actions for the right reasons, see Hitz 2012 (pp. 296–301).

⁴¹ See *Pol* VIII 3, 1337b25–1338a32, and *Pol* VIII 5, 1339a32–33 with 1339b15–25. Music is not the only proper leisurely activity, but merely the one that is appropriate for boys to learn at this stage in their lives—philosophy and contemplation will have to wait until their rational capacities are more fully developed. Aristotle offers as a third purpose of musical education the possibility that it “contributes something with regard to practical reason” (*Pol* VIII 5, 1339a25–26: ἢ πρὸς διαγωγὴν τι συμβάλλεται καὶ πρὸς φρόνησιν), but this option is not further pursued in the remainder of the discussion, perhaps because Aristotle does not believe that music has this effect; see, e.g., *Pol* VIII 6, 1341b6–7, where Aristotle states that training in playing the flute contributes nothing to the mind (ὅτι πρὸς τὴν διάνοιαν οὐθέν ἐστιν ἡ παιδεία τῆς αὐλή-σεως) and that this is the reason why Athena rejected it.

music alters not only the—presumably—natural character traits in the direction of natural virtue, but also the appetitive and the (practical) perceptive capacities of the soul.

Aristotle explains these changes produced by music physiologically in terms of the special representational nature of music: “by hearing imitations . . . all people become similarly affected” (*Pol* VIII 5, 1340a12–14: ἀκροώμενοι τῶν μιμήσεων γίνονται πάντες συμπαθεῖς) and “change with respect to their soul” (1340a22–23: μεταβάλλομεν . . . τὴν ψυχὴν), implying that the affection that is expressed in music—when experienced as audience but especially as performer—will produce the corresponding affection (or disposition: 1340a41) in the listener. This in turn happens because sounds possess likenesses to character traits (1340a18–24):

There are in rhythms and melodies the greatest likenesses⁴² to the true natures of anger and gentleness, and of courage and temperance and of all their opposites, and of other character traits (and this is clear from the facts: for we change in respect of the soul when listening to them). And the habit of being pained or pleased among things that are similar is very close to being in the same, actual condition.

Melodies represent different kinds of natural character traits, while different rhythms represent different kinds of action (1340a38–b10), and humans have a natural affinity to both of these (1340b16–18; cf. *Poet* 4, 1448b20–21). Or, as the author of the *Problems* explains it, sounds consist of two sets of motions: one moving the sense organs; the other moving us in accordance with the character they resemble (*Pr* XIX 27, 919b26–37; cf. *Pr* XIX 29, 920a3–7 and *Pr* XIX 48, 922b22–23).⁴³

Thus, by exposing them to *the right kinds of music*⁴⁴ both as listeners and as performers, boys regularly realize their natural character traits in the

⁴² Cf. *Pol* VIII 5, 1340a29–30: . . . ὁμοίωμα τοῖς ἤθεσιν.

⁴³ Cf. perhaps *Pl. Rep* 401a1–8, and *Rep* 530d6–7: “It is possible,” I said “that just as our eyes are outfitted for astronomy, so our ears are outfitted for enharmonic motion . . .” On Plato’s views about the influence of music on people’s characters, see Barker 2007 (pp. 245 and 249–252) and Horky 2009 (pp. 95–97).

⁴⁴ Not all music is appropriate for educational purposes: education in music—like any kind of teaching—should focus on what is naturally possible and morally suitable for men at each of their stages in life as well as on the mean, since “those three are the standards of education” (*Pol* VIII 7, 1342b17–34). Accordingly, only melodies that “pertain most to character” (ταῖς ἠθικωτάταις) and that do so in a good way are to be used for the habituation of young men (see *Pol* VIII 7, 1341b38, and *Pol* VIII 7, 1342a2–3). These include in particular the Dorian melody because it “is most steadfast and most manly in character” (*Pol* VIII 7, 1342b13–14) and because

best way possible and are habituated to internalize the kind of appropriate emotions and pleasures and pains that one ought to feel when faced with the real objects and situations (*Pol VIII 5, 1340a23–28*). And boys can do so without actually, or yet, having to perform virtuous actions, the qualities of which would have the same effect, as Aristotle claims in the *Nicomachean Ethics*. The comparison Aristotle draws there (*EN II 1, 1103a25–1103b2*) between becoming virtuous through the repeated performance of virtuous actions and becoming a lyre player through repeatedly playing the lyre is thus particularly apt: by performing the right kind of music that expresses virtues of character and noble actions, men not only learn to take pleasure in them themselves by experiencing that pleasure internally but also develop their skills to judge the virtues and noble actions of themselves and others (*Pol VIII 5, 1340b20–25 and 35–39*). In this way, they strengthen their practical perception, internalize the correct moral standards, and become able to distinguish good from bad from a young age onward and before they are necessarily able to perform virtuous actions themselves.⁴⁵

The three habitational practices discussed above cover the main components of Aristotle’s educational program for boys up until the age of fourteen years. The next seven years of education are broken up into two parts by Aristotle, but we receive very little information on what exactly they contain (they are mentioned in *Pol VIII 4, 1338b38–1339a10*): Aristotle encourages young men, roughly between the ages of fourteen to seventeen, to continue to perform light exercises while maintaining a regular diet, and to engage in “other studies” (1339a5: τοῖς ἄλλοις μαθήμασι; it is not clear what these studies refer to, but they could include general education in philosophy, required for leisure and for acquiring the kind of well-educatedness that seems to be presupposed for future students of ethics and lawgivers of cities).⁴⁶ From age eighteen to twenty-one, young men undergo strenuous military training (paired with a strict diet), of the kind that precludes any kind of theoretical study at this time. Presumably, having completed this strenuous educational program, men would be

it occupies a mean in relation to the extremes taken up by the other harmonies (*Pol VIII 7, 1242b14–17*). The Lydian melody may also be used in the education of the young, however, not as a means to shape their character but rather because the tenderness of this melody befits their age (and will also be useful for them in their old age) and because it provides “order and education at the same time” (see *Pol VIII 7, 1342b17–34*).

⁴⁵ Hitz 2012 (pp. 299–300).

⁴⁶ On this type of general training in (especially natural) philosophy, see Leunissen 2015a. On theoretical education in the context of the ideal city, see also Reeve 2012 (pp. 253–256).

in a good position to be receptive to the lectures recorded in Aristotle's *Nicomachean Ethics*.

Habituation in the *Nicomachean Ethics*

In the *Nicomachean Ethics*, Aristotle uses the term “perfection” explicitly and in the relevant way in his earliest discussion of what the character virtues are and how they are acquired (*EN* II 1).⁴⁷ There, after rejecting the view that character virtues come to be by nature, he states that humans are by nature fit to receive the character virtues, but that “[we] are perfected through habits” (*EN* II 1, 1103a23–26; a25–26: τελειούμενοις δὲ διὰ τοῦ ἔθους).⁴⁸ Aristotle offers three arguments for the claim that perfection occurs through habit and not through nature. I will discuss each of them in turn.

First, Aristotle claims that nothing that behaves in one way by nature can be habituated to act contrary to its nature (*EN* II 1, 1103a19–26):

For none of the natural things can be habituated into becoming otherwise: for instance, a stone that naturally moves downward cannot be habituated to move upward, not even if one habituated it by throwing it upward a thousand times, and neither can fire [be habituated to move] downward, nor can anything else that came to be by nature in one way be habituated into being in another way. Hence the virtues neither come to be by nature nor come to be against nature, but while we are by nature fit to receive them, we are perfected through habits.

In other words, natural entities such as stones have a natural tendency to move in one way, and no amount of moving them into the opposite direction will change this tendency; the underlying natural capacity to move for entities such as stones is “one-directional.” However, when it comes to character, Aristotle seems to imply here (and argues explicitly for this view elsewhere: see *EE* II 5, 1222a36–42; *Pol* VII 13, 1332a40–b3; and *EN* II 9, 1109b1–7) that habituation can produce contrary dispositions (the “hence” in 1103b24—ἄρα—implies that we are to understand what virtues are and how they come

⁴⁷ Although Aristotle does not specify what he means by perfection, he clearly understands it as a perfection of *one's nature* (*EN* VII 12, 1153a11–12: τῶν εἰς τὴν τελέωσιν ἀγομένων τῆς φύσεως), as acquiring one's *proper virtues* (*EN* II 5, 1105b29–31; *EN* II 6, 1106a15–24; and, perhaps, *EN* X 5, 1176a27), and as resulting in unqualifiedly good men (*EE* VII 2, 1237a29–30).

⁴⁸ Acquiring character virtue with practical wisdom is, of course, “merely” the secondary of two ways in which humans reach perfection: “the best and most complete virtue” identified with the human good in Aristotle's function argument (*EN* I 7, 1098a16–18) is theoretical wisdom, achieved through a life of contemplation (*EN* X 7–8).

to be through habituation by contrasting this with what happens in the case of natural entities such as stones). Accordingly, Aristotle believes that the natural character traits we have from birth might, for instance, push us into the wrong direction, but by “pulling ourselves into the opposite direction” we can “straighten ourselves out,” “change [those traits] toward the better,” and attain the mean disposition of character that constitutes virtue.

This kind of change, and hence moral development, is possible because metaphysically speaking, the character traits that humans have from birth—although natural in origin—are capacities that are distinct from the natural capacities that stones have to fall toward the center of the earth (or, for that matter, from the natural capacities all animals have for touch): while the latter are one-directional, the former are two-directional and, importantly, require “desire or choice” for their realizations (unlike stones, humans do not simply move or behave in the way they do by nature, but rather do so “by desire and choice”: our intentions matter). Aristotle describes this distinction in a non-technical manner in the passage quoted above from the *Nicomachean Ethics*, but offers a more detailed account in his *Metaphysics*. There he draws a distinction between two types of capacities: “rational capacities” and “nonrational capacities” (see *Meta IX 2* and *IX 5*). Natural character traits, with their dualizing tendencies and ability to be habituated into their opposites, fit the category of capacities that Aristotle identifies as “rational capacities.” Rational capacities belong uniquely to ensouled beings and can be realized into opposite directions by desire or choice. Specifically, Aristotle claims that ensouled beings such as humans can themselves determine—via desire or choice—whether to realize their rational capacities such as the capacities for the performance of a particular craft in accordance *with their own nature* (e.g., actualizing medical science for the sake of producing health, which is the proper realization of medical science) or *to produce their privations* (e.g., sickness, the accidental realization of medical science: *Meta IX 2*, 1046b7–24, and *Meta IX 5*, 1048a10–11). Nonrational capacities, on the other hand, can be found in any type of natural entity but can be realized only in one direction (*Meta IX 2*, 1046a36–b7, and *Meta IX 5*, 1047b35–1048a5): for instance, heat can produce only heat.

On this account, the *individual character virtues* (but not yet character virtue in the strict sense, since character virtue is *not* straightforwardly a realization of a natural capacity) are the proper realizations of the natural character traits that humans have from birth,⁴⁹ which have been stabilized in their best condition

⁴⁹ Cf. *EN VI 13*, 1144b4–9, and perhaps *EE III 7*, 1234a24–30: character traits tend by nature toward natural virtue, which suggests that virtue is the per se realization of the natural capacities for character.

due to men frequently producing a second actuality of these capacities in the direction of virtue. In other words, just as health is the proper realization of medical science, the disposition for courage is the proper realization of the natural character trait associated with courage (which, for those men who are not well born, may have started out being anywhere on the spectrum between cowardice and rashness). The change from a natural character trait (a natural, dualizing, rational capacity) to the corresponding, individual character virtue (a good disposition that neither “is by nature, nor comes to be against nature”), then, is a type of alteration produced by habituation. Specifically, using more-technical language, this time borrowed from Aristotle’s analysis of alteration in his treatise *On the Soul*—this type of change from natural character to character virtue is a form of “special alteration,” which involves the preservation (*σωτηρία*) of an already existing capacity.⁵⁰

That character virtue comes to be in a nonnatural way is also the conclusion of Aristotle’s second argument in *EN* II 1, which points to a difference in temporal priority between capacities that develop naturally and those that develop nonnaturally (1103a26–b2).

In addition, for as many things as are provided to us by nature, we first receive the capacities for them and later we demonstrate their activities (this is clear in the case of our perceptual capacities: for we do not acquire the perceptual capacities from having seen often or having heard often; rather it is the opposite: we use them already possessing them, but we do not come to possess them by using them). But the virtues we acquire by first engaging in their activities, just as is also the case of the other crafts: for the things that we produce after having learned to do so are the same things that we learn by producing them, such as for instance we become housebuilders by building houses and lyre players by playing the lyre. In the same way, then, we also become just by performing just actions, and temperate [by performing] temperate actions, and courageous [by performing] courageous actions.

As Aristotle explains here, natural capacities—such as perception—are first possessed as capacities (we are born possessing them) and are later displayed as activities, but virtue is acquired in a way that is similar to how we acquire other crafts, where the capacity for doing something is acquired by first repeatedly doing it.⁵¹

⁵⁰ And not of proper alteration, which involves the destruction of one affection while another takes its place: *DA* II 5, 417b2–19. Cf. Bowin 2011 (pp. 138–161) and Polansky 2007 (pp. 234–240).

⁵¹ On the similarity between the acquisition of crafts and virtues, see also *Pol* VIII 1, 1337a18–21.

Metaphysically speaking, this distinction tracks again the difference between nonrational and rational capacities (*Meta IX 5, 1047b33–34*):

Of all the capacities, some are innate, such as the perceptive ones, others are by habit, such the [capacity] to play the flute, others are by learning, such as the [capacity] of the crafts, and for some it is necessary to possess them by having previously activated them (*προενεργήσαντας*)—namely, as many as are by habit and by learning—but it is not necessary for those that are not like this and that imply being acted upon.

Natural capacities such as our capacities for perception are nonrational and are acquired via the substantial change that takes place during embryogenesis (i.e., the capacities to perceive come to be at the same time as the perceptive organs). This means that we possess such capacities as first actuality from birth (*DA II 5, 417b16–18*; cf. *GA IV 1, 766a5–10*), while their use or activity—as “second actuality”—is a “special” type of alteration. And since these capacities are nonrational, their activity does not depend on desire or choice, but simply on the presence of objects of perception that act on the sense organs (*Meta IX 5, 1047b35–1048a24*). However, acquiring character virtue is, as Aristotle puts it, just like acquiring the rational capacity to play the flute, which happens by “earlier engaging in their activities” (*EN II 1, 1103a31: ἐνεργήσαντες πρότερον*) and by doing this frequently (cf. also *Rh I 10, 1369b6–7*). That is, by frequently realizing what is presumably a cluster of natural capacities in a certain craft-like way that is not predetermined by nature (e.g., moving one’s fingers along the lyre in certain patterns, learning to discern and remember certain melodies and rhythms), a new craft or skill or disposition comes to be. Technically speaking, the activity that constitutes the second actuality (i.e., the performance of the activity) thus produces the disposition that constitutes the first actuality (i.e., the ability to perform the activity), where this first actuality must presumably be understood as a kind of redirected and conditioned natural capacity or cluster of natural capacities that humans already possess from birth (since nothing can come to be from nothing). Just as moving one’s fingers is a natural capacity that humans have from birth, but playing the lyre is a craft that needs to be acquired through certain types of activity that require “choice or desire,” in the same way natural character traits are capacities humans have from birth, but natural virtues are dispositions that need to be acquired through virtuous activities that require “choice or desire”: as Aristotle puts it, virtue is thus not acquired by nature, but also not against nature.

The kind of “earlier activation” that is required for the production of virtues is spelled out more clearly in Aristotle’s third argument against the naturalness of moral development (*EN* II 1, 1103b6–25): since activities are the causes and means for the production and destruction of virtues (as they are also in crafts), teachers are required to ensure that men perform the activities that are good rather than bad. If there were no such causal relation between the right kind of activity with the right kind of people and virtue, and if men were simply born with unchangeable dispositions for the good (or bad) performance of those activities, teaching would make no difference and men would have virtues (or vices) from birth. Aristotle summarizes this causal relationship as follows (1103b21–25):

In one sentence, then, dispositions come to be from like activities. For this reason it is necessary to display activities of certain qualities (τὰς ἐνεργείας ποιάς): for the dispositions follow the differences between these [activities of certain qualities].⁵² So it makes no small difference whether one is habituated in this way or in another way straightaway from childhood; on the contrary, it makes a huge or, rather, *all* the difference.

According to this account, it is the *quality* of the activity that somehow produces a qualitatively identical disposition in the soul (such that good activities produce virtues; bad ones, vices). In what follows, Aristotle clarifies exactly what qualities one’s actions should have, since this kind of practical knowledge is crucial if one actually wants to become good: first, actions should be in accordance with correct reason (*EN* II 2, 1103b31–32; Aristotle explains what he means by this in *EN* VI), and, second, actions should hold the mean between excess and deficiency in the pursuit of pleasure and pain and in the experience of emotions (*EN* II 2, 1104a11–27; *EN* II 3, 1104b12–16, 1104b25–26, and 1105a6–7).⁵³ Hence, by performing virtuous actions, men experience the qualitative states of feelings and emotions that are constitutive of virtue (i.e., by performing such actions they are realizing their dualizing natural character traits in the direction of virtue), which, if repeated often enough, will produce a qualitatively identical disposition (i.e., a stable *hexis* that replaces the more fickle and changeable natural capacities for character humans possess

⁵² Cf. *EN* II 2, 1103b29–31: “It is also necessary to investigate the issues concerning actions; namely, *how* they should be done: for they are determinative—κύρια—also of the qualities—ποιὰς—of the dispositions that come to be, as we have said.” Lawrence 2011 (p. 246) calls this the “like state from like activity” principle of habituation.

⁵³ Note that actions with these qualities not only produce virtues but also constitute the proper activities of the virtues once acquired (*EN* II 2, 1104a27–b3).

from birth). The psychophysical account of how one becomes virtuous by listening to the appropriate kinds of music as suggested in the *Politics* and of how one becomes virtuous by performing virtuous actions is thus very similar. Both cause the natural character traits, the appetitive capacities, and the perceptive capacities to be *repeatedly* affected and thereby altered in the way that is appropriate for virtue, such that feeling pleasure, pain, and emotions correctly becomes a second nature to that person and he becomes prone to responding to perceptual inputs in the way that is characteristic of the person with a virtuous disposition.⁵⁴ Because of this, there are no significant qualitative differences between the virtuous activities *themselves* as performed by someone who is still in the process of habituating himself versus as performed by the virtuous person. The main difference is that the latter, having also acquired practical wisdom⁵⁵ and possessing all the character virtues as one unified psychological disposition, always performs virtuous actions *from being in this virtuous disposition*, which is firm and unchanging and allows him to perform these virtuous actions *knowingly* (even if this knowledge does not count for much: *EN II 4*, 1105b1–2), and to *deliberately* choose to perform them because of themselves (*EN II 4*, 1105a31–33).⁵⁶

Aristotle somewhat complicates—or perhaps temporarily simplifies for the sake of the argument—this picture (i.e., that humans have natural character traits from birth but acquire the individual, natural character virtues through habituation, which involves the performance of virtuous activities) in a later passage of the *Nicomachean Ethics*, where he treats *both* the natural character traits and the natural dispositions as present by nature (*EN VI 13*, 1144b1–12):⁵⁷

⁵⁴ Cf. *Cat 10*, 13a23–31, and *EE II 2*, 1220a39–b3, where Aristotle characterizes habituation as being changed frequently in a certain way such that the soul is eventually capable of acting in that way.

⁵⁵ Practical wisdom is the proper virtue of practical reason that is acquired via moral education and *indirectly* via habituation, since habituation prepares the ground for moral education: for instance, Aristotle associates habituation with a form of “fine tuning” and inundation of souls (*EN X 9*, 1179b16–18 and 1179b24–26; cf. *Pr XXII 11*, 931a6–15) that makes men receptive to moral arguments (cf. *EN I 13*, 1102b26–1103a1, and *EN X 9*, 1180a7–11). Cf. Burnyeat 1980 (p. 86) and Moss 2011 (p. 239).

⁵⁶ These latter two qualities are essential for what constitutes full virtue (*EN II 4*, 1105b3–4) and are also acquired *through habituation* (1105b4–5: “[they] arise from often performing just and temperate [actions]”). See Moss 2011 (p. 210) for arguments against intellectualist readings of *EN II 4*, 1105a31–33.

⁵⁷ On this passage and the apparent contradiction with Aristotle’s treatment of natural character virtue elsewhere, see Lawrence 2011 (pp. 253–258).

We must therefore also investigate again about virtue. For virtue is also much in the same condition: as practical wisdom is related to cleverness—not the same, but similar—so too is natural virtue related to [virtue] properly speaking. For it appears to all that each of the character traits (ἕκαστα τῶν ἠθῶν) belongs somehow by nature: for we are both just and moderate and courageous and the others immediately from birth. But still, we are searching for something else that is the good properly speaking and for such traits to belong in a different way. For both children and wild animals possess the natural dispositions (αἰ φουσικαὶ . . . ἕξεις), but without understanding they appear to be harmful. This much appears to be seen, that just as a strong body that moves without sight suffers a powerful fall because of the lack of sight, in the same way this happens there too.

Here Aristotle explains that just as practical wisdom is not identical to cleverness but cannot exist without this capacity (*EN VI 12*, 1144a28–29), in the same way character virtue properly speaking is not identical to the natural character traits or natural dispositions but cannot exist without them. It is a common opinion that “we”⁵⁸ all are born with natural (good) character traits, and Aristotle is willing to grant even children and wild animals the possession of the natural dispositions (perhaps immediately from birth as well or acquired later through some kind of natural habituation; both options would be in contradiction with *HA VIII 1*, 588a17–b3, where Aristotle claims that only human animals can develop character dispositions and that there are no dispositions present at birth). However, none of these are “the good” that Aristotle is searching for, and, moreover, they do not belong to their possessors in the right way: without practical wisdom, the individual character traits—even if they have been developed in the direction of virtue—can be harmful, and the psychological condition that constitutes virtue properly speaking is a unique one in that it requires the presence not just of practical wisdom but also of *all* the character virtues as one unified state (*EN VI 13*, 1144b32–1145a2). The acquisition of this psychological condition is what Aristotle calls perfection, and certainly *this* kind of virtue properly speaking can be achieved only through the proper form of habituation, in conjunction with the proper form of moral education.⁵⁹

This evidence from the ethical treatises concerning habituation is not exhaustive. However, I believe that it is sufficient to flesh out Aristotle’s

⁵⁸ Presumably, Aristotle has in mind here the well-born men who form the audience of his lectures on ethics, rather than human beings in general.

⁵⁹ Cf. *EE III 7*, 1234a23–32.

claims about virtue acquisition in *Physics* VII 3 and thereby to present an account of how Aristotle believes habituation produces the character virtues.

5.4 *A Psychophysical Account of Habituation Based on Physics VII 3*

While the ethical treatises do not often characterize habituation in terms of perfection, they are explicit about the fact that habituation is a process through which men realize their human nature to the fullest and are completed in a way not achievable by nature alone, but which requires the help of political science, educational programs, and laws. At least in this respect, the treatment of habituation in the ethical treatises is consistent with the one in *Physics* VII 3. However, Aristotle makes two further claims about the acquisition of character virtue in the *Physics* that require clarification and do not fit immediately with his account of moral development in the ethical treatises: namely, that virtue acquisition is not a case of alteration because virtues are relations, not qualities, and that, although virtue acquisition is not itself a case of alteration, virtue comes to be “when the perceptive part [of the soul] is altered.”

In the ethical treatises, Aristotle never refers to character virtues as relations. On the contrary, Aristotle lists virtues as examples of qualities in *EN* I 6, 1096a25, and although he discusses the status of virtues as dispositions at length in *EN* II 5, he does not distinguish there between dispositions as first actualities of natural capacities and dispositions as relations among certain elements of the soul. However, perhaps the fact that Aristotle is explicit in the ethical treatises that virtues are not straightforwardly realizations of the natural capacities for character that humans have from birth is relevant here: although *becoming virtuous* involves frequent realizations of these natural qualities in a good direction, such that they become altered for the better, character virtue itself cannot be identified with the resulting, stabilized dispositions, because these amount at most to *multiple, individual* natural virtues. Additionally, even though the ethical treatises never mention the idea that virtues are *themselves* relations between (internal) elements of the soul, they do mention how *having virtues* puts one in a good relation with regard to affections (see, e.g., *EN* II 5, 1105b25–26, and *EE* II 1, 1220a33–34), thereby satisfying the second criterion for relations as specified in the *Physics* (VII 3, 246b9 and 247a3–4). Furthermore, although the ethical treatises never define habituation as a process of perfection that always takes place with the alteration of the perceptive part of the soul, we saw above that they regularly

associate habituation with alterations of (natural) character⁶⁰ and, more generally, with changes or movements of the soul.⁶¹ And it is clear that not the whole soul is being changed, but rather only certain aspects of it. It remains to be specified, then, which aspects these are.

Aristotle discusses the structure of the human soul both in his ethical and his natural treatises, and although there are important differences between the two accounts (some of which will be due to the different ends served by political science and natural science), in outline and as detailed as is adequate for the current purposes, the picture is the following.⁶²

First, according to the ethical treatises, we should think of the human soul as consisting of two parts (cf. *EN* VI 1, 1139a4: μέρη τῆς ψυχῆς; note that Aristotle sets aside the question of the meaning of “parts” in this context as irrelevant to the investigation in the ethics: see *EN* I 13, 1102a26–32), one rational and one nonrational. The *nonrational* part consists again of two parts: first, the nutritive part, which is the cause of nutrition and growth but is also shared with everything else that is alive, Aristotle sets aside as having no share in human virtue (*EN* I 13, 1102a32–b12, and *EE* II 1, 1219b20–21 and b26–39). Second, the part that, although it is nonrational itself, is receptive to and has a share in reason, which Aristotle refers to in different ways, calling it “that which is capable of appetite and, in general, of desire” (*EN* I 13, 1102b30; cf. *EE* II 4, 1221b27–32; *Pol* VII 15, 1334b10–29; and *MM* I 5, 1185b1–12), or “the part that concerns character” (as opposed to the one concerning belief: *EN* VI 13, 1144b14–16), or “the perceptive and appetitive [part]” (*EE* II 1, 1219b23: τὸ δ’ αἰσθητικὸν καὶ ὀρεκτικὸν). Virtues of character belong to this part of the soul (*EN* I 13, 1103a3–10, and *EE* II 1, 1220a8–11; cf. *Pol* VII 14, 1333a16–19). The *rational* part of the soul also consists of two parts: the scientific part and the deliberative (or calculative) part of the soul (*EN* VI 1, 1138b35–a17; *EN* VI 6, 1140b24–30). Virtues of thought belong to this part of the soul, and practical wisdom is the virtue of the deliberative part of the soul. So, in one way, then, Aristotle divides the soul into two parts, but in another way he divides it into four parts: the two rational parts—the scientific and the deliberative, and the two nonrational parts—the nutritive and the part concerning desire or character (cf. *EN* VI 12, 1144a9–10, where Aristotle refers to the nutritive part

⁶⁰ See, e.g., *Pol* VII 13, 1332a40–b3 (b1–3: τὰ γὰρ ἔθῃ μεταβαλεῖν ποιεῖ . . . διὰ τῶν ἐθῶν ἐπὶ τὸ χεῖρον καὶ τὸ βέλτιον) and *Pol* VIII 5, 1339a23–24: τὴν μουσικὴν τὸ ἦθος ποιῶν τι ποιεῖν.

⁶¹ See, e.g., *Pol* VIII 5, 1340a12–14 and 1340a22–23: μεταβάλλομεν γὰρ τὴν ψυχὴν ἀκρῶμενοι τοιοῦτων; *EE* II 1, 1220a29–30: γίνεται τε ὑπὸ τῶν ἀρίστων περὶ ψυχὴν κινήσεων; and *EE* II 2, 1220a39–b3 (b2–3: τῷ πολλάκις κινεῖσθαι πῶς, οὕτως ἤδη τὸ ἐνεργητικόν).

⁶² See, e.g., *EN* I 13, 1102a15–26.

as the “fourth part of the soul”—τοῦ δὲ τετάρτου μορίου τῆς ψυχῆς—and indicates that it doesn’t have any morally relevant virtue). However, Aristotle also sometimes treats the soul as having three parts or as being of three kinds: for instance, in his famous “function argument” (*EN* I 7, 1097b22–1098a20), he uses a method of elimination according to which he rejects one by one the kind of life activities that humans share with other living beings (namely, nutrition and perception),⁶³ until what is left is the activity that picks out their essential feature; namely, “the practical [life, picking up ζῶη in 1098a1] of something having reason” (*EN* I 7, 1098a3–4: λείπεται δὴ πρακτικὴ τις τοῦ λόγον ἔχοντος).⁶⁴

This latter, tripartite division of the soul resembles the picture of the soul that Aristotle presents in his *On the Soul*. In this treatise, Aristotle divides the human soul into a nutritive part, a perceptive part, and a thinking part, while characterizing all the remaining *capacities* of the soul as belonging to one or more of these parts.⁶⁵ For instance, in *DA* II 2, 413b11–16, he says that we have now divided the soul into four kinds of life activity (namely, the nutritive capacity, the perceptive capacity, the capacity for thinking, and motion), and that we now need to discuss whether each of these is “a soul” or a “part of the soul” (413b14: μῶριον ψυχῆς), and, if the latter, whether these parts are separable only in definition or also in location, since this “in some cases is not difficult to see, whereas in others there is a problem.” In the remainder of chapter II 2 and throughout *DA* II 3–4, Aristotle formulates the following answers: the capacity for nutrition both is a soul (namely, in plants) and a part of the soul (namely, in animals and humans), the capacity for perception is a part of the soul (namely, in animals and humans), the capacity for thinking both is a soul and is a part of the soul (the first in gods, the second in humans), but motion is not a part of the soul. In doing so, Aristotle appears to use the following two criteria for what constitutes a part of the soul. The first is separability in existence: that is, capacities that can be found in living beings without the presence of any other soul capacities are souls in the case of living beings with no other soul capacities, and parts of the soul in living beings that possess more than one soul capacity. Capacities that can

⁶³ See *EN* I 7, 1097b33–1098a3: “Living appears to be common also to plants, and what is sought for is what is characteristic; hence, we must set aside the living that consists in *nutrition and growth*. Next in order is some kind of *perceptual living*. But this too is evidently shared with horse and ox and every animal.”

⁶⁴ See also Reeve 1992 (pp. 126–127).

⁶⁵ I borrow this Aristotelian model of the soul from Corcilius & Gregoric 2010, whose meticulous discussion of the evidence I can only briefly touch upon in my summary here.

exist without the presence of at least one other capacity are also parts of the soul. The second criterion is separability in account or definition: that is, a capacity of the soul constitutes a part of the soul if its definition makes no reference to a different capacity of the soul. Since the locomotive capacity cannot be defined without references to other soul capacities (namely, desire and thought or imagination), Aristotle rejects it as a part of the soul (*DA* III 9–10). Capacities of the soul that fail to meet these criteria will be defined by reference to the part of the soul to which they belong and are capacities only (and not also parts of the soul): imagination, for instance, is defined by reference to the capacity for perception and is thus a capacity that belongs to the perceptive part of the soul (*DA* III 3, 429a1–2).⁶⁶ Note, of course, that in living beings that possess multiple parts of the soul, and in parts that consist of multiple capacities, the “higher” parts and capacities cannot *in those living beings* exist without the “lower.”⁶⁷

Combining these two accounts, the structure of the perceptive and the thinking parts of the human soul—that is, of the two parts of the soul that are relevant for Aristotle’s moral psychology—appear to be the following. First, the perceptive part consists of several capacities that all are existentially dependent on the perceptive capacity and causally related to each other (*DA* II 2, 413b22–24):

If perception [is present], then also imagination and desire: for where there is perception, there is also pain and pleasure, and where these are, there is necessarily also appetite . . .⁶⁸

For humans, this means that their soul includes (1) the five perceptive capacities (touch, taste, vision, hearing, and smell), (2) the capacities to experience pain and pleasure, (3) the capacities to experience (nonrational) desires and appetites, and (4) imagination. Aristotle does not mention (5) the natural character traits as capacities of the perceptive part of the soul in *On the Soul*, but since their role is to mediate between perceptions on the one hand (i.e.,

⁶⁶ Corcilius & Gregoric 2010 (p. 110).

⁶⁷ On this, see, e.g., *DA* II 3, 415a2–3, and especially *DA* II 3, 414b28–32: “What applies to the soul is almost the same as what applies to geometrical figures. For in both figures and things that are ensouled, that which is prior always exists potentially in that which follows in order; for instance, the triangle in the quadrilateral, and the nutritive capacity in the perceptive.” On this latter so-called “taxonomical” hierarchy, see Caston 1996 (pp. 184–186).

⁶⁸ Cf. also *DA* II 3, 414b1–16; *DA* III 7, 431a8–b10; and *PA* II 17, 661a3–8 (on the relation between perception, the feeling of pleasure and pain, and desire), and *DA* III 3 on imagination and its relation to the perceptive capacity.

the sensory “input”) and the feelings of pleasure and pain on the other (the emotional “output”), it is natural to locate them “in between” these capacities on the above-mentioned causal chain of capacities. Thus, in simple animals without character traits, different kinds of perceptions prompt unmediated feelings of pleasure or pain (e.g., touching an item that constitutes a natural food for that particular kind of animal presumably always produces the same kind of species-specific feeling of pleasure, followed by the same kind of desire to eat it, etc.), but in the more complex animals and certainly in humans, natural character traits stand “in between” perceptions and feelings of pain and pleasure and minimize, aggrandize, or otherwise qualitatively modify the emotional responses to those perceptions. Second, the thinking part of the human soul includes, as mentioned above, the capacities for theoretical thinking and for deliberative thinking (or practical reasoning), the latter of which produces deliberate choice (προαίρεσις) as the result of a wish (which is a rational desire) for some good as an end in itself and of a deliberation about how to achieve that good end (or more specifically, about what should be done in preference to other things in order to achieve that good end). As such, deliberate choice is itself a rational desire for a good-promoting action to be performed (see especially *EN* III 3, 113a9–12). Desires—both nonrational and rational ones—are, as we said, psychophysical processes, and because of this, an essential component of them is that they are particular kinds of heatings or coolings (and thus alterations) of the blood (*MA* 6, 701a4–6):

For the animal moves and progresses by desire or choice, when some alteration has taken place in accordance with perception or imagination.

These particular kinds of heatings and coolings of the blood are alterations that produce contractions or expansion of the *pneuma* that is present in the blood, and this, then, produces the kinds of alterations in the organs of movement that produce locomotion or action (*MA* 7, 701b1–32).⁶⁹

Now, if we take seriously Aristotle’s claim in the *Physics* that virtue acquisition involves the alteration of the perceptive part of the soul, this must mean that all or most of the capacities constitutive of this part are altered via habituation. And, as we saw above, the ethical treatises provide evidence that this is indeed the case for at least four of the five sets of

⁶⁹ See also *MA* 8, 701b33–702a21, and *EN* VII 3, 1147a34–35: “for appetite leads [him]: for it can move each of the [bodily] parts.” Note that rational desires such as wish also cause such heatings and coolings of the blood and thereby help produce action (*DA* III 10, 433a22–29), and that wish is by nature the more authoritative of the two desires (*DA* III 11, 434a12–15).

capacities I mentioned (there is no evidence for habituation *directly* changing imagination, but since imagination in humans is tightly connected to the operation of the perceptive capacity,⁷⁰ these capacities are likely altered together).

First, habituation of the *perceptive capacities* involves not only cognitive training through which one acquires the ability to recognize and judge correctly what is good and bad regarding moral phenomena,⁷¹ but also an alteration of the perceptive capacities themselves such that they are in a perfect mean⁷² and are able to see correctly (and thereby actualize the appropriate feelings of pleasure and pain).⁷³ It is because of this that Aristotle believes that people (freeborn men with the appropriate upbringing) are responsible not only for their character but also for how things appear to them (*EN* III 5, 114a31–b3):

And what if someone would say that everyone seeks the apparent good but that we are not in control of its appearance, but that instead, whatever kind of person each is, such would also be the kind of end that appears to him. Well, then if each [person] is somehow responsible for his own disposition [i.e., state of character], then he is also himself somehow responsible for the appearance in question (καὶ τῆς φαντασίας ἔσται πῶς αὐτὸς αἴτιος).

Second, one's *capacity to feel pleasure and pain* is altered by the frequency and quality of the feelings experienced in response to one's perceptive activity: feeling pleasure and pain in the right way—that is, in a way that tracks the actual good or bad of what one perceives (as opposed to the apparent good or bad)—is a sign of character virtue (*EN* II 3, 1104b3–9; cf. *EE* VII 2, 1237a1–7, and *EN* III 12, 1119a11–17). Since the perceptual mean is naturally biased toward pleasure (*EN* II 9, 1109b7–9), habituation is needed to “make one feel pleasure and pain by the things one should”

⁷⁰ See *DA* III 3, 428b10–16 and 429a1–2, as well as *DA* III 11, 433b31–434a9.

⁷¹ See Moss 2012 (passim) on what the author calls practical induction, and Reeve 2012 (pp. 40–50) on practical perception.

⁷² See, e.g., *DA* III 2, 426a27–b7. On the perceptive capacities as means, see also Polansky 2007 (p. 333). It is possible that the physiological condition of the perceptive capacities is influenced by material factors such as environment and diet, which cause small differences of the more and the less in blood, which in turn cause small, individual differences of the more and the less in the quality of the sense organs, as suggested in chapter 2.

⁷³ Note that objects of perception do not need to be perceived *as* good or bad to be followed by feelings of pleasure or pain; instead, perceiving an object simply is also to feel pleasure and pain with regard to that object. For a detailed defense of this, see Corcilius 2011.

(*EN* II 3, 1104b12–13; cf. *EN* X 9, 1179b24–26, and *Pol* VIII 5, 1339a20–25 and 1339a41–b4).

Third, since the kind of perception that involves feelings of pleasure or pain is causally followed by an appetite or desire to pursue or avoid the object of perception (*DA* III 7, 431a8–14), and since these nonrational desires are a co-cause of action, they need to be appropriately calibrated as well. It is a mark of the virtuous person that he desires the right things at the right time and to the appropriate degree (cf. *EN* III 1, 1111a30–31, and *EN* III 11, 1118b15–21).

And finally, since character traits are the mediators between perceptions and feelings of pleasure and pain (or the emotions more broadly) and the desires that ensue from the latter, altering our individual capacities for specific character traits and turning them into stable dispositions that tend toward the mean ensures—whether these individual virtues are habituated or natural (*EN* VII 8, 1151a15–19)—that the actual good will appear as what is good for himself, that it will be pleasant, and that it will produce a desire to pursue it.⁷⁴

We can now see what Aristotle means in *Physics* VII 3 when he claims that character virtue comes to be when the perceptive part of the soul is altered through perceptibles. For as we saw, boys should be habituated by being exposed to morally good examples, by imitating those examples in play, and by listening to character-shaping music, all of which affects and thereby alters the perceptive capacities and influences the direction in which the natural character traits become stabilized. It is also clear what Aristotle has in mind when he says that pleasures and pains are alterations of the perceptive part of the soul: perceptions—whether immediate perceptions or memories or expectations (the latter of which operate through “the likenesses” to affections: *MA* 8, 702a5–7)—are pleasant or painful, and since feeling pleasure and pain involves a heating or cooling of the blood that produces a desire to pursue or avoid, this too is a kind of affection of the perceptive part of the soul (and, of course, of the sense organs with which the perceptive soul forms a unity). And finally, we can explain why Aristotle identifies the coming to be of pleasure and pain with the coming to be of virtues and vices of character, since it is through the pains and pleasures experienced via perceptions that the capacities of the perceptive part of the soul are altered.

However, moral virtue in the strict sense appears to be more than the sum of the qualitative improvements made with regard to the several capacities

⁷⁴ In men with *full* virtue, this desire or appetite will be in harmony with wish.

that belong to the perceptive part of the soul plus the acquisition of practical wisdom. Although the coming to be of virtue involves these alterations and does not happen without them, the perfection that constitutes the production of character virtue arises when all the individual capacities of the perceptive part of the soul have been brought into their best condition *and* when they have been brought into a proportionate relation to each other, just as Aristotle says that health⁷⁵ is the perfection that arises from such an proportionate organization of bodily elements.⁷⁶ In addition, on this account, the coming to be of virtue in the strict sense will require not only an *internal* improvement and organization of capacities belonging to the perceptive part of the soul, but also an *external rearrangement* such that the perceptive part of the soul and its virtue of character is in a proportionate relation to the deliberative capacity of the soul and is appropriately responsive to practical wisdom.

If this account is correct, then perhaps it also helps explain what Aristotle means by the reciprocity thesis of virtue,⁷⁷ at least at the level of the structure of the soul (*EN* VI 13, 1144b30–1145a2):

It is clear, then, from what we have said, that it is neither possible to be good in the strict sense without practical wisdom nor practically wise without virtue of character. And in this way it is also possible to resolve the argument by which someone might claim dialectically that the virtues are separate from each other: for the same person is not naturally the most well disposed (εὐφύεστατος) with regard to all of them, such that he will already have acquired one but not yet another. Indeed, in the case of the natural virtues this is possible, but in the case of those in accord with which someone is called good in the strict sense, it is not possible: for at the same time that practical wisdom is present, which is one state, they will all be present (ἅμα γὰρ τῇ φρονήσει μιᾷ ὑπαρχούσῃ πᾶσαι ὑπάρξουσιν).

According to the interpretation I have offered above of the process of habituation while using Aristotle's account of the acquisition of virtue in *Physics* VII 3, virtue comes to be only when *all* the constitutive capacities of the perceptive

⁷⁵ Cf. *Cael* I 3, 270a27–29.

⁷⁶ Cf. Simplicius *In Ph* 1071.18: "It is clear that also the virtues of the soul belong to the relations, since they too are due proportions of those things in which they arise—emotions, and appetites, and such—just as the bodily [virtues are due proportions] of hot and cold [bodily elements] and such."

⁷⁷ For a careful discussion of this thesis, and the many problems it raises, see Russell 2014 (pp. 213–217).

soul are in their best condition and are proportionally organized: internally with a view to each other within the perceptive part, and externally with a view to the deliberative part of the soul, which needs to possess practical wisdom. And this resulting unified and stable psychological disposition is what Aristotle calls the perfection of human nature.

CHAPTER 6 | The Natural Character and Moral Deficiencies of Women

6.1 Introduction

Aristotle's focus in the ethical treatises is on the moral development of *men* and, in particular, on that of the future (male) citizens of the ideal city, whose circumstances are the most conducive for becoming virtuous. For although the function argument in *EN* I 7, 1097b22–1098a20, which leads up to Aristotle's definition of the human good in terms of rational activity of the soul in accordance with virtue, is based on an identification of the type of functional activity that is characteristic or proper to humankind as a species, it becomes clear quickly that only a select, freeborn, and well-educated group of men have the necessary natural and cultural prerequisites to actually obtain this kind of human perfection. Provided, of course, that this group of select men receives the correct kind of habituation and moral instruction instilled through the aristocratic constitution, educational programs, and laws of the ideal city.¹ Infamously, Aristotle excludes natural slaves and women from the life of happiness that essentially involves the activity of practical wisdom and moral virtue.²

¹ See *EN* I 7, 1098a12–15; cf. also *EN* I 3, 1095a2–7; *EN* I 9, 1099b29–1100a5; *EN* I 13, 1102a7–12; *EN* V 2, 1130b26–29; *EN* VI 12, 1143b21–23; *EN* X 5, 1176a26–29; *EN* X 9, 1179b7–10; *Pol* IV 7, 1293b1–7; *Pol* VII 13, 1332a7–b11; and *Pol* VII 15, 1334b6–9.

² For the exclusion of slaves, see, e.g., *Pol* III 9, 1280a31–34. Women are excluded indirectly from this kind of life by not being able (and allowed) to function as part of the ruling citizen class: see *Pol* I 12; *Pol* I 13, 1260a5–24; and *Pol* III 1–3. On the possibility of women partaking in the life of happiness that involves the activity of theoretical wisdom, see briefly section 6.3 below. See also Reeve 2012 (pp. 110–113).

In this chapter, I turn to Aristotle's views about the natural character traits and moral development of women and identify their biological underpinnings. Even though Aristotle never states this explicitly, several of his ethical views about the moral deficiencies of women are in important ways causally linked to and explained by his biological views about the physiological imperfections of female relative to male members of the human species.³ In section 6.2, I argue that, although *formally* identical to men (i.e., both men and women share the same human species form and hence possess the same human capacities), Aristotle believes that women, as a result of what happens to them under the influence of material necessity during embryogenesis, are imperfect members of the human species due to their colder *material* nature. This deficiency with regard to the material nature of women has repercussions for their ability—not to perform human functions as such (after all, there is no formal difference between men and women), but to perform them *well*, and therefore for their ability to acquire virtue and to perfect their human nature in a moral sense. Next, in section 6.3, I explain the causal connection between the colder material nature of women, produced by material necessity during embryogenesis, and their particular natural character traits as discussed in Aristotle's biological treatises. I also offer an account of how this colder material nature contributes to women having to acquire the “virtues of assistants” and as naturally being ruled by men, as Aristotle claims in his *Politics*. And finally, in section 6.4, I discuss the two most prominent moral deficiencies attributed to women—namely, the “lack of authority” of their deliberative capacity and their weakness of will—and explain how these flaws are also at least in part causally explained by their colder, materially imperfect natural physiology.

6.2 *The Generation of Women and Their Biological Imperfections Relative to Men*

The coming to be and existence of female animals

Aristotle's most detailed discussion of the biological differences between men and women occurs as part of his account of reproduction and

³ Pace Henry 2007 (p. 252) and Deslauriers 2009 (pp. 215–216 and *passim*). Note that in discussing these issues, I will have little to say about Aristotle's sexism—which I believe is apparent both in his biology and his ethics and is systematic to his philosophy—or about the extent to which his views are driven by empirical evidence or misogynistic ideology; on these issues, see especially Henry 2007, Horowitz 1976, Lloyd 1983, Mayhew 2004, and Nielsen 2008. My

sexual differentiation between male and female animals more generally. Reproduction, according to Aristotle, is a natural teleological process that involves the transmission of the species form from parent to offspring and that has as its end the (eternal) replication of the species, and thereby, ultimately, the participation in the eternal and the divine in the only way possible for mortal beings (see *DA* II 4, 415a27–b7):⁴

For the most natural among the functions for living beings—for as many as are perfect and not deformed or whose generation is spontaneous—is to produce another one like oneself, an animal [producing] an animal, a plant a plant, such that they can participate in the eternal and the divine to the extent that is possible. For everything desires this and does whatever it does in accordance with nature for the sake of this . . . Since then it cannot take part in the eternal and the divine with an uninterrupted continuation, for the reason that nothing among the perishables can remain the same and one in number, each—to the extent that it can take part in it—participates in it, some more and some less, and it remains not as oneself but as something like oneself, and as not one in number, but as one in form.

Reproduction, in a nutshell, is thus formal replication by living beings who are biologically speaking capable of participating in the divine only by producing another one like oneself.⁵

Furthermore, as we already saw in chapter 4, in some animals, such as in humans, reproduction takes place through sexually differentiated parents, where each parent supplies its own principle(s) of reproduction: the male supplies the form and the source of movement (in the form of potentials for form and form-transmitting motions imparted into the female, usually via his semen), while the female supplies the matter (in the form of her menses, which already possess the species form in potentiality). Now, even though in

purpose is not to absolve or criticize Aristotle, but rather to gain a better understanding of his exclusion of women from moral virtue strictly speaking (and hence from happiness) by approaching this question primarily from a biological perspective.

⁴ I have benefited both from Henry 2007, which argues convincingly that sexual reproduction does not have as its proper teleological end the production of male offspring, and Nielsen 2008, from which I borrow my own version of the author's "degrees of perfection" model, according to which the female does not realize the species form to a lesser degree of perfection, as Nielsen thinks, but instead has a lesser ability to perform many of the species-specific capacities due to a defect in her material nature.

⁵ The highest form of participation in the divine that is available to sublunary, mortal beings can be achieved only by those male humans who are able to live well in a moral sense, or, perhaps even more strictly, only by those who are able to contemplate in accord with theoretical wisdom: see, e.g., *PA* II 10, 655b37–656a8, and *EN* X 8, 1178b25–32.

sexually differentiated animals the end of reproduction similarly lies in the production of viable offspring of the same species (or, more specifically, in the replication of their species form in another living being that also has the capacity to successfully engage in reproduction and subsequently replicate its form), and hence not in the production of *male* offspring per se (species forms are not sexually differentiated),⁶ Aristotle holds that reproduction is “most natural” when the motions of the father and male go together and those of the female and mother go together,⁷ and is best when the male principle is able to “dominate” and is able to transmit the species form into the matter *in exactly the same way* as it is realized in him (GA IV 3, 767b5–10 and b15–23):

For even the one who does not resemble his parents is already in a way a monster: for in those cases nature has in a way departed from the form [that is being replicated] (παρεκβέβηκε γὰρ ἡ φύσις . . . ἐκ τοῦ γένους). The first [departure] is that a female is born and not a male—but this is necessary in accordance with nature (ἀναγκαία τῇ φύσει): for the kind that has been separated into female and male needs to be preserved. . . .) And when the spermatic residue in the menses has been properly concocted, the motion of the male produces a form in his own likeness. . . . Therefore when it [i.e., the motion of the male] dominates, it will produce a male and not a female, and it will resemble its father but not its mother, and when it is dominated, with regard to whichever capacity it does not dominate, it produces the corresponding deficiency.

As a consequence of this, reproduction in sexually differentiated animals is deemed to be the least disturbed and the least departed from the form when reproduction results in *male* offspring resembling its father in all its formal aspects, because in that case only the male principle will have succeeded in transmitting its own particular and distinctive form.⁸ The offspring that results when the process remains undisturbed is thus a perfect formal replica of what already has that very same form in actuality, which “happens to be” the father—that is, a *male* individual of the same species. In this way,

⁶ Pace Nielsen 2008 (pp. 377–380) and Witt 1998.

⁷ GA IV 3, 768a21–25: The most natural (μάλιστα . . . πέφυκεν), therefore, is when the [movements] qua male and qua the father dominate together or are dominated: for the difference [between these movements] is small, such that there is no difficulty in both occurring at the same time. For Socrates is a man with a certain quality. Because of this, males resemble for the most part their father, and females their mother . . .

⁸ For Aristotle, the causal factors involved in sexual differentiation are the same as the ones involved in familial resemblances.

Aristotle characterizes the birth of a male offspring that is identical to its male parent as a form of success—that is, as a natural teleological process running its course.

In contrast, Aristotle characterizes the birth and existence of female offspring (or even of a male offspring resembling its female parent) as forms of imperfections or as deviations or departures from the replication of form and as resulting in deficiencies. As Aristotle explains in the passage quoted above, with regard to whatever capacity the male principle does not succeed in leading the female menses to its own proper form (i.e., to the species form *in the way that it is realized in him*), the developing embryo ends up with a deficiency, the most important of which is the incapacity to concoct *sperma*. It is as a result of this latter incapacity that the embryo develops female reproductive organs and hence becomes, anatomically speaking, female (GA IV 1, 766a22–28; GA IV 3, 767b22–23 and 768a2–11). It is also in these contexts that Aristotle infamously characterizes female offspring as being somehow “like a disabled⁹ male” (GA II 3, 737a27–28: τὸ γὰρ θῆλυ ὡςπερ ἄρρεν ἐστὶ πεπηρωμένον) or “like a natural deformation” (GA IV 6, 775a15–16: ὡςπερ ἀναπηρίαν εἶναι τὴν θηλύτητα φυσικὴν).¹⁰

Aristotle does not use this kind of negative language with regard to female animals because he thinks females are somehow not necessary, in general or as conditionally necessary for reproduction or for the preservation of the species,¹¹ or that they are not functional, capable beings in their own right. Rather, these characterizations reveal that Aristotle believes that female animals are the products of a nonstandard—or what I call a secondary—type of teleology:¹² in some cases, natural teleological processes lead accidentally

⁹ I here follow Henry 2007 (p. 254, n. 10) in interpreting πεπηρωμένον as implying a form of disability in this context.

¹⁰ Much has been written on these passages, but even on the most charitable readings—see, e.g., Henry 2007 (pp. 7–11) and Mayhew 2004 (pp. 54–69)—it seems that Aristotle is characterizing the female in terms that are negative and as somehow defective.

¹¹ See GA IV 3, 767b8–10; cf. also *Pol* I 2, 1252a26–28: “those who cannot exist without each other necessarily form a couple, as male and female do for the sake of procreation . . .”

¹² I define the “standard” or the primary process of teleology as the realization of a preexisting, internal potential (or perhaps “potentials”) for form through stages shaped by conditional necessity, thus building on the analysis of Aristotelian teleology in Gotthelf 1987. In features explained by reference to primary teleology, Aristotle refers both to the function performed by that feature and to the form of its possessor, which specifies the functional features that are to be realized through the goal-directed actions of the formal nature. For instance, birds have wings for the sake of flying, but the need to perform this activity derives from the essential nature of birds, which is being a flyer. Wings, then, are exhibited to be the necessary prerequisites for the realization of the bird’s form as flyer. Explanations of phenomena that have come

and of material necessity to the coming into being of materials or structures that are not strictly speaking the realization of the animal's potential for form (i.e., those materials or structures are not conditionally necessitated for the sake of realizing a vital or essential function), but that are nonetheless "used by nature" (i.e., by the formal nature or soul of the animal in question) for a good purpose and for something that is beneficial to the animal in question. Aristotle characterizes functional structures that are the result of this kind of secondary teleology often as having "come to be of necessity," while "being present" (or as animals having them) "for the better." In addition, because female animals are the products of this type of "secondary teleology" and possess, as a result of this, an inferior material nature compared to male members of their species, their capacities to perform some of their species-specific functions are diminished as well. Let me defend these two claims in turn.

First, let me explain more clearly what I mean by secondary teleology, by turning to Aristotle's explanation of the female menses as having come to be "of necessity" and as then being used by nature "for the better" (*GA* II 4, 738a33–b5):

Thus the coming to be of this residue [i.e., the menses] among females is the result of necessity (ἐξ ἀνάγκης) because of the causes mentioned. Because her nature is not capable of concoction, it is necessary that residue must come to be, not only from the useless nourishment but also in the blood vessels, and that they must overflow when there is a full complement of it in those very fine blood vessels. And nature uses it for the sake of the better and the end for this place, for generation (ἔνεκα δὲ τοῦ βελτίονος καὶ τοῦ τέλους ἡ φύσις καταχρητῆται πρὸς τὸν τόπον τοῦτον τῆς γενέσεως χάριν), in order that it may become another creature of the same kind as it would have become. For, even as it is, it is in potentiality the same in character as the body of which it is the secretion.

In all females, then, residue necessarily comes to be . . .

Even though the presence of female menses is conditionally necessary for sexual reproduction, Aristotle treats these menses as nonvital or nonessential parts, perhaps because they play a role in reproduction only *on occasion* and are not structural features of the female body (as is evidenced by the fact

to be and are present as the result of primary teleology (such as wings) thus typically include references both to the ends that constitute final causes (e.g., functions such as "flying") and to the definition of the substantial being of the organism in question (e.g., definitions such as "being a flyer"), which constitutes its formal cause. I discuss the difference between "primary" and "secondary" teleology extensively in Leunissen 2010.

that they do not come to be until puberty and disappear after menopause, that their presence and bulkiness correlates with the availability of food and the amount of exercise one performs, and that, for the most part, they remain unused and are excreted from the female body on a regular basis).¹³ So while he explains essential or vital parts such as fins in fish by reference to the substantial being of the animal (and hence the potential for form that is being realized) and the function that is being served by these parts (e.g., fish are essentially swimmers, and fins realize the function of swimming),¹⁴ Aristotle states that parts such as menses are used for a good purpose by nature after already having come to be “of necessity.” The latter presumably means “material necessity” in this context: since concoction for Aristotle is a process of heating, condensing, and purifying, and since female animals are cooler and are less able to concoct blood, their blood remains of material necessity bulkier and there will be more residue, causing their veins to overflow and the menses to form. But because these menses have useful material potentials (i.e., they are potentially the body from which they are secreted), nature, like a good housekeeper (cf. *GA* II 6, 744b11–27), does not throw them away but uses them for reproduction at those times when there is also male *sperma* available in the uterus. In cases such as these, Aristotle often conceptualizes nature as a kind of craftsman encharged with the creation of animals, as if there were a hypothetical moment in time at which each animal species first had to be designed (perhaps in a manner resembling the “first creation” of human beings by the Demiurge and the lesser gods in Plato’s *Timaeus*). The functional features emerge, as it were, from the potentials of the materials that happen to be available, and the teleological workings of the formal nature “deciding” what good to use them for is secondary to the operation of material necessity that produced those materials.¹⁵

¹³ Cf. also Lennox 2001b (pp. 186–187) on why Aristotle insists on calling the menses residues.

¹⁴ For the examples, see *PA* IV 12, 693b6–14, and *PA* IV 13, 695b17–26: “Fish do not have distinct limbs [such as arms or feet], owing to the fact that their nature according to the definition of their substantial being is to be able to swim (διὰ τὸ νευστικὴν εἶναι τὴν φύσιν αὐτῶν κατὰ τὸν τῆς οὐσίας λόγον), and since nature makes nothing either superfluous or pointless. And since they are blooded in virtue of their substantial being, it is on account of being swimmers (διὰ μὲν τὸ νευστικὰ εἶναι) that they have fins . . .”

¹⁵ For some other clear examples, see, e.g., *PA* III 2, 663b21–35, and *PA* IV 12, 694a22–b11: “It is of necessity that this comes about during generation (ἐξ ἀνάγκης δὲ τοῦτο περὶ τὴν γένεσιν συμβέβηκεν). For the earthen and warm material in the body becomes parts useful for protection. . . . In some [nature] constructs length for the legs, in others—instead of this—it fills the gaps in their feet. . . . Of necessity, then, these things happen owing to these causes (ἐξ ἀνάγκης μὲν οὖν ταῦτα συμβαίνει διὰ ταύτας τὰς αἰτίας), but it is for the better that they have

We find a similar pattern of explanation in Aristotle’s account of the coming to be of female animals, which he provides in the context of addressing a more general question: given the existence of some species that reproduce without being sexually differentiated, why are there other species that are sexually differentiated into males and females?¹⁶ Aristotle specifies that his explanation consists of two parts; namely, an account in terms of the material-efficient causes involved in reproduction to be provided later (in the remainder of *GA* II and more explicitly in *GA* IV 1–2), and an account that appeals to the final cause and that he provides immediately (*GA* II 1, 731b18–732a11):

That the male and female are principles of generation has been said earlier, and also what their capacity is and the definition of their substantial being. The cause on account of which there come to be and exist the female and the male—that it is, on the one hand, *of necessity* and *because of the first mover and the quality of the matter* (ὡς μὲν ἐξ ἀνάγκης καὶ τοῦ πρώτου κινουόντος καὶ ὁποίας ὕλης)—is necessary to try to show in the following account, but that it is, on the other hand, *on account of the better* and *because of the for the sake of something* takes its principle from further away. . . . (ὡς δὲ διὰ τὸ βέλτιον καὶ τὴν αἰτίαν τὴν ἕνεκά τινος ἄνωθεν ἔχει τὴν ἀρχήν)

Now it is impossible for the animal to be eternal as an individual—for the substantial being of the things that are is in the particular, and if it were such it would be eternal—but it is possible for it [to be eternal] as a species. That is why there is always a continuous generation of humans, animals, and plants. And since the principles of these are male and female, male and female will be present for the sake of generation in each of the things that possesses them. But the primary moving cause is better and more divine in its nature than the matter, insofar as the definition and the form belong to it, *and it is better that the superior cause be kept separate from the inferior one. It is on account of this that (in those species where this is possible) the male is separated from the female. . . .* However, the male comes together and combines with the female

such feet, for their way of life (ὡς δὲ διὰ τὸ βέλτιον ἔχουσι τοιοῦτους τοὺς πόδας τοῦ βίου χάριν), in order that, since they live in water, where wings are useless, they have feet useful for swimming. For they become oars for sailing just like the fins of fish. Therefore, when of the first group the fins fail, or of the second group stuff between their feet, they no longer swim.”

¹⁶ Note that for Aristotle the question of why there are *male* members of a species is equally pressing, and it is something he addresses again, from a slightly different perspective, in *GA* II 5, 741a6–b6. There, Aristotle indicates that it is clear from the observation of phenomena such as those of wind eggs that the female can reproduce—at least up to a certain extent—without the help of males. However, in sexually differentiated kinds, females need the help of males in order to perfect the process of reproduction (ἐπιτελεῖ τὴν γένεσιν), because otherwise males would have existed in vain and “nature makes nothing in vain.”

in order to perform the function of reproduction, for this is something common to both.¹⁷

In specifying the final cause of the coming to be and existence of the male and the female, Aristotle takes for granted as facts that sublunary beings are mortal and can participate in the divine only by engaging in a continuous cycle of reproduction, and that there are two principles of reproduction—one formal-efficient one called male, and one material one called female. The reason why these two principles are separated—when this is possible—is because it is a general teleological principle of nature that it is better to keep the superior separated from the inferior (for this principle, see also *Cael* II 8, 290a29–b1). Sexually differentiated species thus exist for the better: it is better, *when possible*, for nature to separate the superior cause of reproduction from its inferior one and put them in separate beings. One part of the explanation Aristotle provides for sexual differentiation is thus explicitly teleological.

However, this separation is in fact possible because (as we already saw in chapter 4) the process of reproduction is complex, and achieving the “perfect concoction,” so to speak, of the female menses by the male principle is difficult. See, for instance, Aristotle’s description of this process of concoction later in the book (*GA* II 6, 743a26–32):

The heat is present in the spermatic residue, possessing the amount and quality of motion and power as is in proportion to each of the [bodily] parts. To the extent to which it is lacking or is excessive [in motion and power], what is being completed will come out either inferior or deformed (ἢ χεῖρον ἀποτελεῖ ἢ ἀνάπηρον τὸ γινόμενον), in the same way as what happens with the things that are being put together outside [the body] through boiling for culinary enjoyment or some other use.

So this is where the “of necessity” and “the first mover and the quality of the matter” figure into the explanation: when the female menses are too copious or too cold (i.e., when the quality of the matter is suboptimal), or when the male principle is not hot enough or too hot (i.e., when the first mover is not strong enough or produces “excessive concoction”), the male principle will fail to dominate the female menses or to produce other defects in the offspring.¹⁸ And the same problems can occur due to any kind of

¹⁷ The added emphasis is mine.

¹⁸ For a parallel example, see Aristotle’s explanation in *HA* I 9, 491b27–34, and *HA* IV 8, 533a11–12, of the dysfunctional eyes of moles in terms of a deformity that happens during

material-efficient disturbance that happens, of material necessity, such as under the influence of climate or diet (see chapter 4 and *GA IV 2* on this), during the process of embryogenesis. Due to these possible influences of material necessity on the process of reproduction, the process of concoction—and hence the offspring—thus achieves varying degrees of perfection (cf. *GA IV 3*, 769b3–13), in the same way as in the process of boiling food: some will come out cooked to perfection, some will come out inferior but still edible, and some will come out simply ruined. There come to be perfect beings that possess the relevant species form and are capable of concocting blood into semen, imperfect beings that possess the relevant species form but are incapable of concocting blood into semen due to a lack of heat, and, finally, monstrosities that do not possess the relevant species form, are not capable of reproducing, and are therefore “not useable by nature” as a container for a principle of reproduction. However, given the availability of two useable types of “vehicles for reproduction” and the fact that in animals who possess both perception and the capacity for locomotion, the two principles of reproduction can be separated without there being any practical problems for them to be reunited—nature matches, as it were—the superior principle with the superior body (males carry the male principle) and the inferior principle with the inferior body (females carry the female principle). Again, the answer Aristotle formulates in *GA II 1*, 731b20–21, to the question of why “there come to be and exist the female and the male” is best read against the backdrop of a thought experiment involving a hypothetical developmental hypothesis about nature “first” designing animals and making a “decision” about whether or not to separate the two principles of reproduction in some animal kinds, while keeping them together in others.¹⁹

In short, Aristotle’s explanation of the existence of males and females can be paraphrased as such: since perfect concoction is difficult and since therefore, of material necessity, materially less perfect beings will come to be

generation (ὡς ἐν τῇ γενέσει πηρουμένης τῆς φύσεως) and his characterization of them as “imperfect” in *HA I 9*, 491b27 (ἀτελής) and *DA III 1*, 425a9–11.

¹⁹ Just to be clear: Aristotle does not believe that there ever was an *actual* point in time at which formal natures decided, so to speak, to make use of the materially necessitated differentiation that occurs between some animals in their reproduction process to create females, with the purpose of separating the two sets of principles of reproduction; the question of why there exist males and females strictly pertains to nature’s *hypothetical design* of animals. On this, see Leunissen 2010 (p. 126). For a similar “thought experiment” about the hypothetical beginning of heavenly motion, see *Cael II 2*, 285b1–7. Cf. also Gotthelf 1987 (p. 184, n. 46) on natures “deciding” how many stomachs and sets of teeth to give a certain animal: “It would not be amiss to see a vague developmental hypothesis in the background.”

with some regularity, nature—being the good housekeeper that it is—uses these beings for something good; namely, for the containment of the inferior principle of reproduction. In this way, nature achieves a general teleological good, since in these beings the superior and inferior principles of reproduction are separated. And in all this, the female, as a product of imperfect concoction, is characterized as inferior to the male.

The material imperfection of female animals relative to males,
and why this matters

The reason Aristotle considers women and female animals in general to be less perfect members of their species *relative to their male counterparts* ultimately lies, as I have suggested above, in a difference of the more and the less between their respective *material* natures rather than in there being a *formal* difference between them.²⁰ Female animals are simply less perfected and therefore cooler than male animals, and this makes them worse concoctors.

More specifically, due to what happens to them under the influence of material necessity during embryogenesis, female bodies are less well concocted and are therefore less shaped in accordance with the species form as realized in the male parent, and they are born with a relatively cooler material nature than is typical (or natural and ideal) for their species. Because females are colder and lack natural heat, they are worse at concocting than males are. And, according to Aristotle, it is the female's *incapacity* to concoct blood into semen that defines her as female, whereas the male animal is defined positively by his capacity to concoct blood into semen, which he possesses as a result of his relatively hotter material nature (*GA IV 1, 765b8–17*):

But the male and the female are differentiated by a certain capacity and incapacity: for the one that is able to concoct and to form and to discharge semen with a principle of form is the male . . . , while the one that receives it and cannot form or discharge [this kind of semen] is the female. In addition, if all concocting is accomplished via heat, then it is also necessary that among animals the males are hotter than the females.²¹

²⁰ See *Meta X 9* (passim) and *GA II 5, 741a6–9*: male and female realize the same species form and hence possess the exact same set of soul capacities that characterizes them as the kind of (human or nonhuman) animal they are. On this, see also Henry 2007 (p. 260).

²¹ See also *GA I 20, 728a17–21*: “. . . and the boy resembles a woman in appearance, and the woman is like an infertile male: for it is through a certain incapacity (*ἀδυναμία γάρ τινι*) that she is female; namely, by not being able (*τῷ μὴ δύνασθαι*) to concoct the final stage of nutriment into *sperma* . . . on account of the coldness of her nature,” and *GA IV 1, 766b16–18*: “The

It is important to stress, again, that this incapacity to concoct blood into semen does not make females defective animals or women defective humans without qualification: the incapacity that Aristotle picks out as a differentiating factor between males and females is not in fact an absolute lack, since the female is able to concoct blood well enough for it to become a kind of seed and still serve a function in the reproduction of her species.²² It instead refers to a *lesser* ability to perform a particular capacity that others—the males—can perform well and even perfectly. The female thus is *not* a deficient or dysfunctional member of her kind as such but is instead imperfect, first and foremost, *with regard to* the capacity to concoct blood and *relative to* the degree to which her male counterpart can realize this capacity.²³

However, possessing a colder material nature can also affect the performance of *other* species-specific capacities, some of which—at least in the case of human females—also affect their moral development. Before arguing for this claim in more detail in section 6.3, let me conclude this section by offering a general argument for why such a difference in material nature in the human case matters for one’s capacity to become morally virtuous and happy.

First, as I argued in the previous chapter, Aristotle typically conceives of moral development—and especially of the process of habituation—as a form of perfecting human nature, which involves realizing one’s own nature to the fullest, such that one lacks nothing with regard to one’s proper virtue, whether this virtue belongs to oneself qua human or qua practitioner of a certain craft (see *Meta* V 16, 1021b14–23).²⁴ This kind of perfection of human nature evidently allows for degrees: there will be bad humans and good humans, just as Aristotle believes that there are bad flute players or thieves and good flute players or thieves. Only those who lack nothing with regard to their proper virtue and cannot be excelled in their kind are perfect.

Now, in his function argument (*EN* I 7, 1097b22–1098a20), Aristotle defines the proper function of humans as the activity of the rational soul

female is opposite to the male, and it is female because of the inability to concoct (τῆ ἀπεψία) and the coldness of the sanguineous nutriment.”

²² Cf. Aristotle’s characterization of some animals as bloodless: these animals do not, in fact, lack blood altogether, but instead possess a different kind of blood.

²³ I here follow Witt 2012 (p. 87) in interpreting disability or deformity as a “structural, functional, and teleological notion for Aristotle.” Females are disabled and imperfect on the grounds that they do not fully or optimally develop their reproductive capacity *relative to* the standard provided by males.

²⁴ *EN* II 1, 1103a23–25; *Pol* VII 17, 1336b40–1337a3; and *Ph* VII 3, 246a13–17; cf. Iamblichus *Protr* IX 49.28–50.12.

in accordance with virtue (and if there are more virtues than one, in accordance with the best and most complete virtue) and consequently identifies the proper *virtue* of humans—the one that constitutes happiness—as performing this particular activity of the rational soul *well* or *finely*. If, for comparison's sake, using Aristotle's own example provided in a later chapter (i.e., *EN* II 6, 1106b17–19), we suppose that the function of an eye is to see, then its virtue is what “makes both the eye and its function excellent, since it is because of the eye's virtue that we see well.” And, as Aristotle explains in his biological works, material differences of the more and the less in biological parts can produce functional differences of the better or worse, even when those differences in matter did not come to be for the sake of producing those functional differences. In particular, with regard to eyes, differences in degrees of the liquidity of the eye—and hence eye color—determine the discriminative power of the corresponding eyesight, even if the particular degree of liquidity comes to be as a result of material necessity and is not conditionally necessitated for the sake of producing this functional difference.²⁵ The same appears to be true for living beings and their individual material natures as a whole, as Aristotle's subsequent example of the horse and its virtue makes clear (*EN* II 6, 1106a19–21). If the function of a horse is galloping and carrying its rider and standing steadfast against enemies, and its virtue is to do these things well, then it is easy to see how even small differences of the more and the less in the material nature of horses (even if, formally speaking, they are identical and all possess the same capacities) can make a difference for the extent to which they will be able to perform their function and hence for whether they will be able to perform their function *well*. Thus, those horses that have a relatively colder material nature relative to what is typical or ideal for their species will be less spirited and therefore less courageous when faced with enemies and more prone to flight, and those horses that are either too heavy or too skinny will not be able to excel at galloping: their material natures prevent them from performing their function well and therefore from achieving virtue.

As we saw in the previous chapters, the individual material nature that a living being has from birth provides advantages or disadvantages relative to the achievement of the functions that are characteristic and proper to that species (presumably, the closer one's individual material nature is to the ideal for one's species, the easier it will be for that individual to perform its

²⁵ See *PA* II 2, 648a13–19, with *GA* V 1, 779b33–780a13 and 780b12–781a11.

species-specific functions). In some cases, training or habituation might be able to correct for whatever natural imperfections one has due to one's particular material nature: skinny horses can—with proper diet and exercise—be trained to gallop better and, with time, possibly even excellently. Similarly, perhaps, men born in the south will be able to habituate their flawed natural character traits toward moral virtue, even if with great difficulty and with much effort from the lawgiver. However, in other cases, perfection—moral or otherwise—might not be possible. Take, for instance, Aristotle's comments about the amount of exercise it takes for a person to reach physical health (in *Cael* II 12, 292b10–19): some people already possess it, others require a great many exercises in order to achieve it, and yet others are naturally so far removed from health that they can never achieve it, no matter how much they exercise.

With regard to the capacities that are relevant for moral development, women belong to the latter class: due to their colder material nature, relatively speaking, women—either always or for the most part—lack from birth and by nature the natural prerequisites to be able to perform the relevant moral activities *well enough* to ever reach moral excellence or virtue of the kind specified in Aristotle's ethics. Their natural disadvantage regarding their material nature is, again, always or for the most part too great to be remedied through habituation. Sure enough, women can reach their *own* proper excellence or virtue, as defined relative to female humans and perhaps to their role in the household,²⁶ but it will be of a different kind from the human excellence available to (freeborn) men.

6.3 *From Natural Character to the Virtue of Assistants in Women*

The relative lack of internal heat that characterizes female animals according to Aristotle and makes them incapable of concocting blood into semen is also responsible for certain physiological differences between male and female animals. These differences do not just pertain to the development of female versus male reproductive organs, but also to features that are causally connected to their natural character profile and are therefore—at least in the case of women—also potentially important for moral development.

²⁶ Cf. *EN* VIII 12, 1162a22–24, where Aristotle claims that both men and women have their *own* function in the household, through which they both contribute to the common good, but performing this function well will *not* constitute human flourishing for women.

I will discuss two of these features in turn: stunted bodily growth and inferior quality of blood.

Women are less (perceptually) intelligent as a result of their inferior bodies

In the case of live-bearing females, which includes human females, possessing a lower level of internal heat leads to a kind of “stunted” growth due to there being less growth from the middle or from where the heart is located. And, as a result, the bodies of these females tend to be less erect and more dwarf-like (see, e.g., *PA* IV 10, 686a32–b2 and 686b21–687a4; cf. *PA* IV 12, 695a6–10), as well as smaller and weaker than that of the male animals of the same species (see, e.g., *GA* I 19, 726b30–727a1, and *HA* IV 11, 538a22–24). This happens because, as I argued above, their birth itself is a result of the developing embryo not having received the proper or “natural” amount of concoction (*GA* IV 2, 766b28–34; *GA* IV 6, 775a15–21; cf. *GA* II 6, 743a29–32), such that “nature departs from the type” and the female comes to be as a kind of monstrosity (*GA* IV 3, 767b5–14).

In human animals, the difference between the natural heat in the male and female is even larger than in other species (*GA* IV 6, 775a5–7), and this explains why women take longer to develop in the womb, while reaching maturity and old age sooner than men on account of the resulting weakness (*GA* IV 6, 775a9–22).²⁷ In addition, women, compared to other live-bearing animals, have more-inferior bodies, relatively speaking, because women menstruate the most copiously and thereby expel residues that would otherwise have been used up for growth (*GA* I 19, 727a18–25):

It is necessary to consider the same thing to be the cause also for the fact that the bulk of the bodies is smaller in the females than in the males among live-bearing animals. For only in them is there a flow of menses out [of the body], and among them this is clearest among women: for among animals, women discharge the largest amount. And this is why her paleness and non-prominent blood vessels are always conspicuous, and why *the shortcoming of her body compared to men* is obvious (τὴν ἔλλειψιν πρὸς τοὺς ἄρρενας ἔχει τοῦ σώματος φανεράν).

²⁷ That is, they take longer to “cook” and therefore need longer to grow and develop all the necessary bodily parts, but once born they cool down more quickly during the process of aging, which is basically a process of cooling and drying. Cf. *Pr* X 8, 891b21–24: “Why is it that males are for the most part larger than females? Is it because they are hotter, and this produces growth? Or is because they are complete, whereas [females] are mutilated? Or is it because the former grow to perfection over a long time, while the latter in a short [time]?”

Aristotle adds that during pregnancy, women, more than other live-bearing female animals, suffer more because they no longer expel these residues, and this is especially the case for those women who lead sedentary lives, since labor would provide an alternative way to use up these extra residues (*GA IV 6*, 775a27–b17).

These shortcomings in the bodies of women, however, are not restricted just to their size and strength: in the *History of Animals*, Aristotle claims that in the male “the upper and front parts” are “better and stronger and better equipped” (κρείττω καὶ ἰσχυρότερα καὶ εὐοπλότερα), while in the female “the parts on the back and below” are better developed, and that this pertains also to humans (*HA IV 11*, 538b2–7). The implication of this remark is not just that male animals are better equipped in terms of defensive organs (think of horns and tusks, which are located on the front part of the head and are typically larger or present only in males) while females are better at sitting around, but also that the sense organs in females are developed less well and are therefore functionally inferior to those of males. This is relevant for the moral development of women because possessing inferior organs of perception compromises their perceptual intelligence (cf. also *PA IV 10*, 686b21–28), which makes them, always or for the most part, less intelligent than men. In addition, as a result of having less erect postures and having their bottom parts better developed, women also end up having stooped figures, which is commonly associated with being spiritless and slavish.²⁸

Women’s natural character traits are the furthest away from natural virtue due to colder, impure blood

In addition to having weaker, inferior bodies and sense organs as a result of their lack of internal heat, women—and female animals in general—also have blood that is inferior in quality compared to the blood of their male counterparts (*HA III 19*, 521a21–27):

The [blood] of females is different compared to that of males: for it is thicker and blacker (παχύτερόν τε γὰρ καὶ μελάντερόν) in females even when they are the same [as males] regarding health and age, and there is less on the surface in females, and there is a greater amount of blood on the inside. And among all female animals, womankind has the most blood, and among animals the so-called menses are the most copious in women.

²⁸ See, e.g., *Pol I 5*, 1254b27–34; *Phgn* 3808a12–15; and Plato *Phaedo* 253c–e.

According to Aristotle, humans as a species have the moistest, purest, and hottest blood of all animals (*HA* III 19, 521a2–3, and *De Iuv* 19, 477a15–25), making their species-specific blood profile the best of all (*PA* II 2, 648a9). However, relative to the blood type that is characteristic and ideal for humans as a species, the blood of *female* humans exhibits a certain type of difference of the more and the less. Given the lack of internal heat that defines the female, the blood of women will be colder than that of men (cf. *PA* II 2, 648a11–13). In addition, as can be inferred from *HA* III 19, 521a21–27, quoted above, it will also be less thin and pure: the thickness and blackness of the female blood is due to a higher concentration of earthy particles or fibers in the blood than is typical for the human blood type and is therefore earthier than would be ideal. It is concoction that purifies and condenses blood (see *GA* I 20, 728a26–30; *GA* II 3, 737a28–29; and *GA* IV 1, 765b28–36), but women, due to their lack of internal heat, are incapable of doing this well.²⁹ Thus, while women have *more* blood and therefore possess a larger amount of fluids in their body compared to men,³⁰ the blood itself is of a lesser quality; it is colder, earthier, and drier than the blood of men. And since Aristotle believes that the natural character profile one has is determined by the material properties of one’s blood (see chapters 1–2), these differences of the more and the less in their blood produce a natural character profile that is distinctly different from the one ideally or typically found in men.

More specifically, given the relative coldness and earthiness of the blood of women, their natural character profile appears to present a not previously discussed and *fourth* type, and one that complements the three character profiles mentioned in *Pol* VII 7, 1327b18–38, and *PA* II 2, 648a2–11. Whereas the ideal man (who is most likely, though not necessarily exclusively, born and raised somewhere in Greece) has, by nature, blood that is hot, pure, and thin (i.e., his blood is “well mixed”), and is therefore naturally well disposed toward courage and intelligence (which makes it easier for the lawgiver to lead him to virtue), women appear to occupy the exact opposite end of the

²⁹ The female’s inability to concoct blood into semen affects not only the quality of her menses but also the quality of the blood that is used as nourishment for her body and is not yet turned into this kind of *sperma*. Cf. also *HA* III 19, 521a33–34, where Aristotle describes the blood of the old as “thick and black and scarce”: since aging is a process of cooling and drying, old people also seem to have a larger concentration of earthy particles in their blood.

³⁰ See *GA* IV 1, 765b17–18: “for it is on account of the cold and the inability [to concoct] that the female is more abundant in blood in certain parts.”

TABLE 6.1 The Four Human Character Profiles (on the Basis of *PA* II 2–4, *Pol* VII 7, & *HA* III 19)

TYPE OF BLOOD	MATERIAL PROPERTIES	NATURAL	
		CHARACTER TRAITS	BELONGS TO
Hot and thin blood (= moist and pure)	“Best” type of blood; Prone to boiling; Produces softness and calmness in flesh, which is then more sen- sitive to motions	Courage Intelligence	Men, Greeks [Human Ideal]
Hot and thick blood (= dry and earthy, hence fibrous)	Prone to boiling; Produces hardness in flesh, which is then less sensitive to motions	Strength Spirit Stupidity Independence	Northern barbarians; cf. bulls, boars, & young men
Cold and thin blood (= moist and pure, hence watery)	Prone to chilling; Produces softness and calmness in flesh, which is then more sen- sitive to motions	Cowardice Timidity Intelligence Naturally suited for being ruled	Southern barbarians; cf. deer, bees, & old men
Cold and thick blood (= dry and earthy, hence fibrous) [copious in amount]	Prone to chilling; Produces hardness in flesh, which is then less sensitive to motions	Cowardice Timidity Stupidity Naturally suited for being ruled	Women

spectrum³¹ and share in the negative character traits Aristotle attributes in particular to two kinds of barbarians (for a schematic representation, see table 6.1 above). Just like the blood of the barbarians who live to the north of Greece, the blood of women is dry, thick, and earthy, relatively speaking. As a result of this, women—just like this particular group of barbarians—are for the most part deficient in perceptual intelligence, since the abundance of earthy particles in their blood makes their sense organs hard³² and less

³¹ There is an interesting passage in the *Economics* in which the author suggests that the natures of men and women are organized by god (ὑπὸ τοῦ θεοῦ) to complement each other with a view to a common life (*Econ* I 3, 1343b26–1344a7). He characterizes women as more protective because of fear, and men as more defensive because of courage (1343b30–1344a1: ἵνα τὸ μὲν φυλακτικώτερον ἢ διὰ τὸν φόβον, τὸ δ' ἀμυντικώτερον διὰ τὴν ἀνδρείαν). The language of divine providentiality this author uses is unusual for Aristotle, but the stereotypes are the same.

³² Cf. *Pr* X 4, 891a29–32: “. . . and the bodies . . . of women [breath] less [well] than those of men, for it [i.e., breath] is directed to the menses. And the smoothness [of their bodies] reveals the thickness of their flesh.”

sensitive to the motions produced by the objects of perception.³³ However, since women are lacking in internal heat, this dumbness is not compensated for by a greater amount of spirit. Just like the blood of barbarians living to the south of Greece, whom Aristotle characterizes as being for the most part intelligent, but spiritless, the blood of women is cold, which produces a lack in spirit and hence timidity, cowardice, and a state of always being ruled.

The natural character profile of women in the *History of Animals* and its moral implications

This very crude natural character profile of women as being cowardly, timid, less intelligent, and naturally suited for being ruled also surfaces in Aristotle's discussion of the natural character traits of female animals and women in the *History of Animals*. In this treatise, Aristotle makes several important points about natural character traits as one of the four differentiae of animals (see especially *HA* I 1, 488b12–24; *HA* VIII 1, 588a18–b3; and *HA* IX 1, 608a11–b18). One of these is that in animals that are sexually differentiated, there also exists a differentiation in the character traits of the two sexes. This differentiation is most visible in the larger and more perfect animals, including humans (*HA* IX 1, 608a21–24 and 608b4–8):

In as many kinds as there is a female and a male, nature has almost in the same way³⁴ set apart the character of the female in comparison to that of the male (σχεδὸν ἢ φύσις ὁμοίως διέστησε τὸ ἦθος τῶν θηλειῶν πρὸς τὸ τῶν ἀρρένων). And this is most clear with regard to humans and animals that possess largeness and the live-bearing four-footers. . . . And the traces of these character traits can be seen in all, but more clearly in those that have more character and mostly in humankind: for this [kind] has the most perfected nature, such that also those dispositions are most clearly [present] in them.

Aristotle offers several examples to illustrate this claim, and he does so largely by pointing out how the female differs from the male, who appears to be taken as a standard.³⁵ For instance, Aristotle characterizes female animals in general as “softer (μαλακώτερα), faster to tame, more admmissive to being

³³ Pace, e.g., Modrak 1994 (pp. 209–210), which argues that because the rational capacity of the soul is not embodied, bodily differences between men and women make no difference with regard to their intelligence.

³⁴ The “almost in the same way” refers to how nature according to Aristotle has “set apart” the sexes themselves—see *GA* I 23, 731a21; *GA* II 1, 732a11; and my discussion in section 6.2 above.

³⁵ Aristotle lists twenty-seven female and six male character traits in *HA* IX 1, 608a11–b18.

handled, and more trainable” (*HA IX 1, 608a25–27*), and he claims that, with a few exceptions, the female is “less spirited, softer, more mischievous, less straightforward and more impulsive, and more thoughtful with regard to the feeding of the young” (*HA IX 1, 608a33–b2*). Aristotle’s characterization of women—that is, of human females—is worth quoting in full (*HA IX 1, 608b8–16*):

For this reason, a woman is more merciful and easier moved to tears, and in addition more jealous and more criticizing, and more abusive and more ready to strike. There is also more despondency and more pessimism in the female compared to the male, and she is also more shameless and deceiving, cheats more readily and has a more retentive memory, and in addition is more wakeful and idle, and in general the female is much less movable than the male and requires less food. And the male is more helpful and, as we have said, more courageous than the female . . .³⁶

In this depiction, three claims in particular are worth discussing further in light of their implications for the moral development of women.

First, Aristotle seems to believe that female animals in general—including, presumably, human females—have the kinds of character traits that make them naturally more suitable for *domestication* than males (see *HA IX 1, 608a25–27*, quoted earlier). There is thus already in Aristotle’s biological account of animals the suggestion that females are naturally more suited for being ruled by others (as is also implied by their lack of spirit, to which I will return below). In the *Politics*, Aristotle argues that this is indeed the natural role of females (*Pol I 5, 1254a21–b14*): in all living things, whenever one communal entity is formed out of multiple elements, Aristotle claims there naturally appears to be a ruling and a ruled entity, and it is natural and beneficial for the latter to be ruled by the former, as is evident with regard to body and soul but also with regard to animals and humans, and female and male, since “the relation of male to female is that of natural superior to natural inferior, and that of ruler to ruled” (1254b13–14: ἔτι δὲ τὸ ἄρρεν πρὸς τὸ θῆλυ φύσει τὸ μὲν κρείττον τὸ δὲ χεῖρον, καὶ τὸ μὲν ἄρχον τὸ δ’ ἀρχόμενον). For the marital part of household science, this natural differentiation between men and women means that a husband always rules his wife “in the way a statesman does” (*Pol I 12, 1259b1: πολιτικῶς*), but without taking turns in ruling (*Pol I 12, 1259a38–b1 and 1259b9–10*; note that in 1259b1–3, Aristotle here too appeals to the “biological fact” that the male is “naturally more capable

³⁶ Cf. Ps.-Aristotle, *Phgn 5, 809a26–b14*, for a very similar characterization of the female.

of ruling than the female” in order to justify this practice).³⁷ Women can rule and share in the deliberative process regarding some things, since they are capable of successfully engaging in means-end reasoning, but tend to fail to act on their decisions, especially in cases that invoke fear or extra burdens (I explain this further in section 6.4 below).³⁸ As such, they may rule parts of the household,³⁹ where perhaps a failure of executive control is less prevalent, but not their husbands. In cases where wives do rule their husbands, Aristotle ascribes this to external factors such as their wealth and power, and not to their natural characteristics or virtue (see *EN VIII* 10, 1160b32–1161a4). In addition, the fact that women are naturally ruled also means that the friendship between husband and wife is an unequal one that is based on the superiority of the husband as a ruler (*EN VIII* 7, 1158b11–14; *EN VIII* 11, 1161a22–25; and *EE VII* 3, 1238b24–25). And, as we will see below, this natural suitability for being ruled has important consequences for the kind of natural virtues that women can acquire.

Second, many of the personality traits Aristotle ascribes to female animals and women in the *History of Animals*, such as their shamelessness, impulsiveness, and lack of control regarding emotions involving pain or anger, involve deficiencies, seem rather negative, and appear to be natural tendencies toward vice. In addition, he ascribes to them two traits that he elsewhere explicitly associates with moral deficiencies. These are, first, the relative softness of women compared to men (see *HA IX* 1, 608a25: μαλακώτερον γὰρ τὸ ἦθος ἐστὶ τῶν θηλειῶν; and 608b1: μαλακώτερα), and, second, their relative lack of spirit (see *HA IX* 1, 608a33 (ἀθυμότερα), 608b3, and 608b11) and its related trait, cowardice (see *HA IX* 1, 608b15–16).⁴⁰ Aristotle does not mention this natural softness of women as a character trait elsewhere in the biological treatises, but he attributes it explicitly to women in the context of an analysis of weakness of will in the *Nicomachean Ethics* (see especially *EN VII* 7, 1150a31–b16). By “softness” (μαλακία), Aristotle in this context means the opposite disposition to endurance, both

³⁷ This natural suitability of women for being ruled or domesticated also appears to extend to their sexual relation with men: see *EN VII* 5, 1148b31–33.

³⁸ See Nielsen 2015 (passim).

³⁹ See *EN VIII* 10, 1160b33–1161a3, where Aristotle argues that within households, men should not be controlling (κυριεύων) over everything but should let whatever is suitable to women up to them to control, and *Pol III* 4, 1277b20–25, where Aristotle explains that it is the task of women to preserve the properties acquired by the man in household management. On what exactly the rule of husbands over their wives entails, see Riesbeck 2015.

⁴⁰ See also Mayhew 2004 (p. 93), which singles out these two traits as having priority in Aristotle’s characterization of the female.

of which lie on a spectrum in between fully developed virtue on the one hand and vice on the other. Women possess this kind of softness “through birth” (*EN* VII 7, 1150b15: ἡ μαλακία διὰ τὸ γένος). I will discuss this trait and its relation to weakness of will in women further in section 6.4.

The second trait—namely, the lack of spirit in women—is the same trait Aristotle identified in Asians as making it difficult for them to be led to virtue (see again *Pol* VII 7, 1327b18–38): those lacking spirit are naturally timid and cowardly, are prone to living a politically slavish life, and are therefore not very suitable for citizenship in the ideal state. Just like Asians, women lack any form of natural courage and are idle and difficult to move into action.⁴¹ In addition, lack of spirit means that women are not easily roused by emotions that involve spirit, such as anger, revenge, and irascibility (see *EN* VII 6, 1149a25–b26),⁴² and are more prone to plot in secret (cf. *EN* VII 6, 1149b13–15). Further, since spirit is thought to engender a kind of desire for self-government and independence (*Pol* VII 7, 1328a6–7),⁴³ its absence reinforces the natural suitability of women for being ruled and dominated, as well as for needing protection from the part of men.⁴⁴ And finally, although lack of spirit does not seem to prevent women from forming friendships (Aristotle defines spirit as the capacity for forming friendships: *Pol* VII 7, 1327b40–1328a5), these relations may not extend beyond the members of the household so as to include communal friendships.⁴⁵ Lack of spirit thus seems to hold back women from performing the kinds of actions and forming the kinds of bonds that are constitutive of the political, virtuous life that is open to freeborn men with well-mixed characters and good upbringing.

Third, about the intellectual traits of female animals, Aristotle claims in his *History of Animals* that females are easier to train (*HA* IX 1, 608a27: μαθητικώτερον), that they are more thoughtful when it comes to feeding their young (608b2: φροντιστικώτερα), and that they are more retentive in their

⁴¹ See Heath 2008 (pp. 255–258).

⁴² Being less prone to anger might make women also less sensitive to concerns about justice (see Burnyeat 1980, p. 79, on *EN* V 8, 1135b28–29) or the fine (see *EN* III 8, 1163b30–31).

⁴³ See Koziak 2000 (pp. 87–88) on what the author calls “martial *thumos*.”

⁴⁴ In the biological treatises, Aristotle appeals to the fact that males are stronger and more spirited (τὸ ἄρρεν ἰσχυρότερον καὶ θυμικώτερον) in order to explain why they alone, or they more than females, possess defensive parts, while thereby implying that females are less able to use such parts on account of being weaker and less spirited: see *PA* III 1, 661b26–33, and *HA* IV 11, 538b15–24.

⁴⁵ On love or friendship of mothers for their children and other forms of family friendship, see *EN* VIII 1, 1155a16–19; *EN* VIII 2, 1161b16–27; *EE* VII 6, 1240a35–36; *EE* VII 8, 1241b1–9; and *GA* III 2, 753a7–17.

memory (608b13: μνημονικώτερον). However, although Aristotle never states that female animals are less intelligent than males, it is not clear whether these descriptions are meant to be unambiguously positive. For instance, concerning the retentiveness of their memory,⁴⁶ Aristotle distinguishes elsewhere between those who possess retentive memory and those who are capable of recollecting, and he associates the former with people who are slow or sluggish (οἱ βραδεῖς) and the latter with those who are quick and smart (οἱ ταχεῖς καὶ εὐμαθεῖς), thus suggesting that having a retentive memory is characteristic of less intelligent people (*Mem* 1, 449b6–8). In his *Politics*, Aristotle is adamant that women, too, must be educated (*Pol* I 13, 1260b15–16). Unfortunately, Aristotle does not specify what kind of education he has in mind, but, presumably, given their intellectual shortcomings, even with access to the kind of formal education provided for freeborn men in the ideal city, it would be harder for women to acquire theoretical wisdom (and potentially reach human flourishing and happiness in that way).⁴⁷

Regarding the natural character traits of women and the prospects for their moral development, then, we can draw at least the preliminary conclusion that whatever kind of virtues of character will be available to them, their habituation will not be easy because their natural character traits skew women toward inactivity and in the direction of vices, or at least in the direction of feelings and actions that are on the deficiency side of the mean.⁴⁸ As Aristotle puts it in the *Eudemian Ethics* (*EE* VII 2, 1237a3–7), women—compared to men—are simply “further away on the road toward virtue.”

The character virtues of women as the “virtues of assistants” in the *Politics*

The only place where Aristotle explicitly addresses the question of whether women can acquire moral virtue is *Politics* I 13. There it is brought up in the context of a discussion about whether natural slaves can have virtues that go beyond the use of their body as a tool and are more honorable, “such as temperance, courage, justice, and other such dispositions” (*Pol* I 13, 1259b22–25).

⁴⁶ See also Mayhew 2004 (p. 96), which suggests that by retentiveness of memory Aristotle means that females are more resentful and hold a grudge longer.

⁴⁷ Cf. Reeve 2012 (p. 253).

⁴⁸ Cf. *Pr* I 11, 860b8–12: “But why is it that when the summer comes with a Boreas and dry, as well as the late autumn, it benefits those who are phlegmatic and women? Is it because the nature of both is excessive in one direction, such that the season, by dragging it into the opposite direction, establishes well-mixedness?”

For Aristotle, the question whether women—and children—can have such character virtues is “almost the same” as asking this question about slaves (*Pol* I 13, 1259b29–31), and so he discusses these cases together. Both for women and natural slaves, Aristotle needs to establish, first, whether in fact there are such things as character virtues that can belong to these groups of humans, and, second, if there are such virtues of character, which virtues each of these groups should possess, and whether they are the same as the ones pertaining to freeborn men (thus, Aristotle wonders whether they should be “temperate and courageous and just”).

Note that from the outset, however, Aristotle’s investigation is concerned with the question of whether women and natural slaves can acquire *individual, natural* virtues of character, and not with the question of whether they can possess full virtue. Since Aristotle argues that one cannot have complete virtue of character without also being practically wise (*EN* IV 13, 1144b31–1145a2), and since acquiring practical wisdom is not possible for women or natural slaves,⁴⁹ these groups of people cannot acquire the distinct and unified psychological disposition that constitutes moral virtue in the strict sense. Thus, the character virtues at stake in this chapter in Aristotle’s *Politics* must be relatively stable dispositions of the soul that (1) dispose one toward feeling and doing the right thing just like full virtue does, but in this case, “what is right” will need to be determined relative to the individual and his or her status as wife or natural slave in the household; that (2) can—and indeed must—be acquired through habituation (*Pol* I 13, 1260b13–20) and by improving the natural character traits women and natural slaves have from birth; and that (3) can be possessed individually and without the presence of practical wisdom. Hence, whatever these natural virtues of character turn out to be, women will only *partially* be able to perfect their human nature through habituation.⁵⁰

Aristotle’s way of dealing with this question of whether slaves and women can have virtues of character and whether those are the same as the virtues that pertain to men is rather complex, so let me trace his explanatory strategy in some detail. First, Aristotle claims that the method for answering these questions should be *general* (i.e., the explanations should be given at the highest level of generality), since in both cases the questions can be reduced to whether “natural rulers” and “those who are naturally ruled” have the same

⁴⁹ Only freeborn men and perhaps even only rulers can possess the virtue of practical wisdom; see *Pol* III 4, 1277b25–26: ἡ δὲ φρόνησις ἀρχοντος ἴδιος ἀρετὴ μόνη.

⁵⁰ Reeve 2012 (p. 104).

virtues or not (*Pol* I 13, 1259b32–34). Next, Aristotle reasons that, given that (1) ruling and being ruled are different in kind and not different by the more and the less and that (2) it is implausible for a unity of ruler and ruled to have the one share in the virtues of character while the other does not, the conclusion must be that both share in virtue, but that their virtues must be different in kind (*Pol* I 13, 1259b34–1260a4). Third, with this conclusion in place, Aristotle turns to the structure of the soul because he believes that considering it will also immediately lead to this very same conclusion (*Pol* I 13, 1260a4–14). Just as in the soul there is a ruling part and a part that is being ruled (namely, the rational and the nonrational parts of the soul), and these two parts each have their own virtue (namely, intellectual virtue and virtue of character), so too with every other pair of natural ruler and ruled living being (whether this pair consists of a free person and slave, man and woman, or father and child): they too have their own virtue that is characteristic for them (and that is hence different in type from the virtue the other person has). Furthermore, the *type* of virtue that each ruler and ruled person has corresponds to the type of rule they exercise or undergo; that is, whether the rule is tyrannical, political, or kingly. And what type of rule is being used depends in turn on the way in which the various parts of the soul are present in those ruling and being ruled. That is, presumably it is the psychological condition of the person ruled that determines what kind of rule the ruler should exercise, given that the psychological condition of the ruler is taken to be the norm. And, finally, Aristotle proposes that we must assume that the same necessarily holds for the virtues of character as well (*Pol* I 13, 1260a14–20):

That it is necessary that all have a share in them, but not in the same way, but rather inasmuch as is sufficient for each with regard to one's own function. It is therefore necessary that the ruler has complete virtue of character (for his function is unqualifiedly that of a master craftsman, and reason is a master craftsman), and each of the other ones [should have virtue of character] as much as pertains to them.

In other words, only the ruler possesses virtue of character in the strict sense (as he also possesses practical wisdom), while those who are being ruled possess virtues of character that are different in kind (and also somehow of a lesser kind), but appropriate to the specific function performed by the person ruled. Aristotle's *general* answer to the general question is thus that *all* have a share in character virtue, but that those virtues—such as temperance, courage, and justice—are not the same in kind for the ruler and the ruled (*Pol* I 13, 1260a20–24).

Regarding the particular character virtues of women, Aristotle's argument entails that their type of virtue should correspond to the type of rule by which they are ruled, and the type of rule by which men rule over women is supposed to be determined by the particular way in which the parts of the soul are present in women, which is different from the way in which those very same parts of the soul are present in natural slaves and children (*Pol* I 13, 1260a10–12: καὶ πᾶσιν ἐνυπάρχει μὲν τὰ μόρια τῆς ψυχῆς, ἀλλ' ἐνυπάρχει διαφερόντως). The relevant part of the soul that turns out to differentiate women, slaves, and children from freeborn men is not the perceptive part of the soul to which the character virtues belong, but rather the deliberative part of the soul (*Pol* I 13, 1260a12: τὸ βουλευτικόν). Notoriously, Aristotle claims that women have this part (unlike slaves, who lack it entirely), but that it is “without authority” (*Pol* I 13, 1260a9–14; a13–14: τὸ δὲ θῆλυ ἔχει μὲν, ἀλλ' ἄκυρον). I will say more below in section 6.4 about what I think it means for a deliberative capacity to lack authority, but for now it is clear enough that (1) Aristotle introduces it as a psychological deficiency that is natural and characteristic to all women (just as it is natural and characteristic to all natural slaves to lack the deliberative capacity and to children to have it, but in an undeveloped way), that (2) he takes this psychological deficiency to provide the causal explanation for why women are ruled in the particular way they are, and that (3) this type of rule has repercussions for the kinds of virtues women can and should have.

In the preceding chapter (see *Pol* I 12, 1259a38–b10), Aristotle characterized the type of rule of husband over wife as the rule of a statesman—that is, as the rule between equals⁵—but explained that, in the case of husband and wife, the wife does not take turns ruling: women remain in a permanent state of being ruled politically. This type of rule is supposed to be fitting for her, perhaps not only because she is naturally submissive because of her lack of spirit (a deficiency women have relative to men with respect to their *perceptive* soul and one that they have in common with natural slaves), but also, as is suggested here in *Pol* I 13, because she is incapable of ruling her husband as a consequence of another naturally occurring psychological deficiency, this time pertaining to the *deliberative* part of her soul. As for their character virtues, this entails that, as Aristotle explains here, the virtues of women are not identical in kind to the virtues that carry the same name and that can and ought to be acquired by men. While the virtues of men are those “characteristic of the ruler,” the virtues of women are instead those

⁵ Cf. *Pol* III 4, 1277b7–9, where Aristotle characterizes this type of rule as belonging to those who are “similar in birth and free.”

“characteristic of an assistant” (*Pol* I 13, 1260a20–24; a23: ἡ μὲν ἀρχικὴ . . . ἡ δ’ ὑπηρετικὴ).⁵² As a particular example of such a virtue of assistants that is proper to women, but not to men, Aristotle mentions silence.⁵³

The fact that women have—or should have—the virtues of assistants does not mean that these virtues are to be developed only for the sake of serving their husbands well: political rule is for the sake of the ruled and only accidentally for the ruler himself (*Pol* IV 7, 1278b37–1279a1), and women assist their husbands not in the sense of simply obeying them, but by contributing to the deliberations and decisions that need to be made within the household, over which he ultimately retains authority.⁵⁴ However, it does mean that—as in the case of the virtues of the child, who is both biologically and morally imperfect⁵⁵—their virtues do not belong to them in relation to themselves, “but in relation to the end and the leader” (*Pol* I 13, 1260a31–33). That is, the virtues of women are virtues not because they are good for and of women qua women,⁵⁶ but because they are the good for and of women in relation to the household of which they are part and in relation to the husband, who forms the head of the household and is her ruler.

Later in the *Politics*, Aristotle reaffirms this view that the virtues of men and women differ in kind in the same way as the virtues of the ruler and the ruled are different, and he states again that some are proper to one but not to the other (*Pol* III 4, 1277b20–25):

[J]ust as the temperance and courage of a man and of a woman are different [in kind, and are not one in form]; for a man would seem to be a coward if his courage were such as the courage of a woman, and a woman [would seem to be] garrulous if she had the decency just as that of a good man, since also the art of household management is different for a man and for a woman: for the

⁵² Cf. *Pol* III 5, 1277b13–20, on the virtues of the ruler and those of the ruled being different.

⁵³ *Pol* I 13, 1260a28–31 (a30–31: “Silence brings an adornment for a woman, but for a man that is not the case”). For virtues that are proper to women, see also *Rh* I 5, 1361a5–7: “of women, the virtues of body are beauty and stature, of soul, temperance and a love of work that is not vulgar.”

⁵⁴ Assisting is not necessarily a form of slavishly serving: see *EN* IV 3, 1124b17–18, on the magnanimous man being eager to offer assistance. For the example and for what Aristotle means by “virtue of assistants,” see also Riesbeck 2015.

⁵⁵ I take καὶ in *Pol* I 13, 1260a31, to indicate that what is now said about the child already was presumed to apply to the woman.

⁵⁶ Of course, women who possess the appropriate virtues of character and are ruled well benefit from this in the nonmoral sense of biological preservation and flourishing: see *Pol* I 5, 1254b10–13, and *Pol* III 6, 1278b17–30.

function of the one is to acquire, and of the other to protect. (Cf. *EN VIII* 12, 1162a22–24)

The habituation and education of women, then, will focus on their role in the household, and ultimately also on the kind of constitution of the city of which the household is part (*Pol I* 13, 1260b14–16): “for the virtue of a part needs to be determined by looking at the virtue of the whole, and both children and women should be educated with a view to the constitution.” Freeborn women make up half the free population of the city, and even if they are not part of the citizenry, their virtue or vice will affect the virtue of the city as a whole.⁵⁷

The upshot of Aristotle’s discussion of natural character and the character virtues is thus that women suffer *natural* deficiencies both in the perceptive part of the soul (i.e., a lack of spirit) and the rational part of the soul (i.e., a deliberative capacity that lacks authority), and that these two together explain (1) why women are so far removed from the unified psychological disposition that constitutes strict virtue that the latter will—always or for the most part—be outside their reach, and (2) why it is natural for them to be permanently ruled in a political manner. Women can acquire the natural, individual character virtues, but they are of a distinctively different kind (and not merely different by the more and the less) from the ones that can be acquired by freeborn men. As a result, even those character virtues that are the same in name both for men and women will not share the same standard for what state (of the perceptive part) of the soul constitutes the mean. Moreover, the perceptive part of the soul of women—with all its constitutive capacities—will have to be trained to be obedient not to the women’s own practical reason (which is defective in a manner that I will specify further below), but to that of the male leader of the household, who holds the ultimate authority,⁵⁸ and who, ideally, has practical wisdom or is at least in the process of developing it.

⁵⁷ In *Pol II* 9, 1269b12–1270a11, Aristotle discusses Sparta as an example of where women were granted too-much license and thereby caused harm to their city.

⁵⁸ See Deslauriers 2003 (pp. 216–217), which suggests that natural subjects can have a kind of full virtue by borrowing the practical wisdom from their natural rulers, while possessing the virtue only of the appetitive part of the soul in themselves. However, if my account of Aristotle’s moral psychology as presented in chapter 5 is correct, then women cannot have *full* virtue of any kind, and certainly not the kind the activity of which constitutes happiness, since that requires a proportionate, balanced relation between the perceptive and rational parts of *one and the same soul*.

6.4 *A Psychophysical Account of the Moral Deficiencies in Women*

According to Aristotle, women can and should acquire their proper virtues of character (namely, the virtues of assistants discussed above), may well be clever,⁵⁹ and some—albeit with great difficulty—may even be able to acquire theoretical wisdom (if society grants them the education and leisure to do so). However, they will never be morally virtuous in the strict sense. Unable to acquire practical wisdom and being in a permanent state of being ruled due to a lack of spirit, women ultimately depend on the rule of their fathers and husbands in practical matters and therefore cannot act as autonomous moral agents or engage in the kind of virtuous activity that constitutes happiness. In addition to their lack of spirit, Aristotle discusses two other natural imperfections that women have from birth that leave them unable to perform virtuous activities in an unqualified sense: women suffer from a natural softness that could potentially lead to a particular type of weakness of will, and their deliberative capacity “lacks authority,” which makes it impossible for them to acquire practical wisdom. Let me discuss each of these in turn and bring out, to the extent possible, their causal relation to the imperfect material nature and natural character traits that women have from birth.

Female softness and weakness of will due to weakness

Aristotle discusses the weakness of will that is characteristic of women in the context of a somewhat disjointed chapter (*EN VII 7*) that tries to separate out proper versions of weakness of will from other, related character traits, all of which pertain to the pleasures and pains specific to moderation and self-indulgence.⁶⁰ Aristotle states that weakness of will and self-control pertain to pleasures, while softness (*malakia*) and endurance pertain to pains, and he claims that most people fall in between each of the two extremes but typically closer to the natural trait that constitutes the deficit (*EN VII 7*, 1150a9–16). In this chapter, Aristotle defines softness as the inability to withstand pain most people—or most men—are capable of resisting (see also *EE II 6*, 1202b29–36, and *EN III 7*, 1116a14–15: “for to flee from painful labors is softness”). And extending weakness of will also to cases involving pain, he says that a similar

⁵⁹ Aristotle describes *deinotetês* as the natural but morally blind prerequisite to practical wisdom: see *EN VI 12*, 1144a23–29, and *EN IV 13*, 1144b1–17.

⁶⁰ On Aristotle’s treatment of *akrasia* in this chapter, see Bobonich 2009 (pp. 130–156).

condition holds of those who are weak of will: the weak-willed are not able to struggle successfully against pleasures or pains that most people are able to overcome or withstand (*EN VII 7, 1150b1–16*):

Someone who is deficient with regard to the things the many resist and succeed [in resisting], that person is soft and effeminate (οὗτος μαλακός και τρυφῶν), for effeminacy too is a kind of softness. Such a person drags his cloak, so as to avoid suffering the pain of lifting it up and mimicking a sick person he does not consider himself to be miserable, although he is similar to a miserable person.

And similar things are the case concerning both endurance and weakness of will. For if someone is overcome by strong and excessive pleasures or pain, that is not surprising, but it is forgivable, provided he resists, just as Philoctetes of Theodectes does when bitten by the snake or as Cercyon does in the *Alopê* of Carcinus, and just as people who are trying hold their laughter burst out all of a sudden, such as happened to Xenophantus.

But [it is surprising] if someone, with regard to those [pleasures or pain] most people are capable of resisting, is overcome by them and is not capable to resisting [them], unless it is because of the nature of one's stock or because of disease, such as the softness among the Scythian kings⁶¹ that is due to their stock and that sets the female apart from the male (ὡς τὸ θῆλυ πρὸς τὸ ἄρρεν διέστηκεν).

As Aristotle explains here, although in many cases not being able to endure the pleasures and pains most people are able to endure is something reproachable, there are also cases where being soft or weak willed is pardonable; namely, when the pains or pleasures are too excessive or when the person affected is soft by nature—as is the case with the Scythian kings and, as we already saw above in our discussion of the natural character traits of female animals in the *History of Animals*—with women.⁶² People who are naturally soft in this way are susceptible to pains and hence prone to being overcome by emotions involving pain, such as fear, timidity, and grief, and this makes them morally weak and reluctant to perform actions that bring on any kind of pain or burden. Although this kind of softness is bad (cf. *Rh II 6, 1383b33–1384a2*), Aristotle believes that people with this natural condition

⁶¹ The Scythians were considered to be the most effeminate people according to the Greeks: see, e.g., Hippocrates *Airs 17–22*.

⁶² On this kind of softness, see also Mayhew 2004 (pp. 98–99). The physiognomic sign of natural softness as a character trait in people is straight eyebrows: see *HA I 9, 491b14–15* (μαλακοῦ ἤθους σημεῖον).

should be pitied, not admonished, since we also do not admonish people who are naturally ugly or naturally blind (see *EN* III 5, 114a22–26).

In the section that follows (*EN* VII 7, 1150b19–28), Aristotle defines two proper kinds of weakness of will.⁶³ The first is “weakness of will due to impetuosity (*propeteia*),” which causes people to act before starting or completing the process of deliberation due to affection, and which is most commonly found among people who are naturally quick spirited and melancholic⁶⁴ (1150b25–26: οἱ ὀξεῖς καὶ μελαγχολικοί). Those who are quick spirited fail to complete the process of deliberation due to their fast-acting passions, while the melancholic do not deliberate at all due to their excessive passions. The second kind is “weakness of will due to weakness (*astheneia*),” which causes people to fail to abide by the outcome of deliberation due to affection. This means that their nonrational desires to pursue pleasures, or to avoid pains in the case of the extended, qualified form of weakness of will Aristotle had introduced earlier, undermine their rational desires for what they know they should do.⁶⁵ Aristotle does not specify in which group of people this kind of weakness of will is most commonly found, but women and the Scythian kings mentioned earlier are presumably among the ones who suffer from weakness pertaining to pain.⁶⁶ To the extent that these groups of people can engage successfully in the process of deliberation at all, their natural softness will make them reluctant to, and possibly even incapable of, bearing the pains and burdens associated with acting in accordance with the outcome of their deliberations. If this is true, then it seems that the natural lack of spirit in women that is in part responsible for their natural softness is also, at least in part, responsible for their particular type of weakness of will. It is not because women are excessively passionate or driven by desires that they do not or cannot stand by the conclusions of their deliberations

⁶³ In drawing these distinctions, Aristotle presumably builds on an earlier division of weakness of will into two kinds, first introduced in *EN* VII 3, 1147b9–12, according to which one “does not have the final proposition” (i.e., this person fails to reach the conclusion of a practical syllogism), while the other has it “but does not know it, like the drunk repeating the verses of Empedocles” (i.e., this person reaches the conclusion but does not stand by it). On these distinctions and their relation with the account of weakness of will in *EN* VII 7, see Charles 201b (pp. 189–197).

⁶⁴ Melancholic people according to Aristotle suffer from a “spirituous affection” and resemble people who are permanently drunk or in a state of fever; on melancholy, see my discussion in chapter 2.2.

⁶⁵ This is a simplification of the interpretation defended in Charles 201b (pp. 203–206).

⁶⁶ See Irwin 1999 (pp. 264–265) and Nielsen 2015 (pp. 577–578). For the resemblance between the soft and the weak, see also Charles 201b (p. 193, n. 10).

(or act preemptively before reaching these conclusions), but because their nonrational desires to avoid pains most men are naturally capable of enduring undermine their rational desire to do what is right. In any case, Aristotle argues that this kind of weakness of will due to weakness is harder to cure than weakness of will due to impetuosity, *and* that the natural version of it is harder to cure than the habituated one (*EN VII 10*, 1152a27–33): for those in whom natural softness leads to weakness of will, it will be very hard to overcome this condition through habituation and to change it for the better.

There is no association between weakness of will due to impetuosity and the natural character of women in the *Nicomachean Ethics*, which is to be expected given the general lack of spiritedness in women. However, the one and only passage in the Aristotelian corpus that explicitly attributes weakness of will to women seems to involve a variation of the kind of weakness of will due to impetuosity, since it is due to an excess of sexual desire rather than due to excessive spiritedness (*GA IV 5*, 774a3–6):

Because of this it is also that among women, with regard to as many as are weak willed with regard to such sexual intercourse (πρὸς τὴν ὀμιλίαν ἀκρατεῖς τὴν τοιαύτην), when they have given birth to many children, cease from their passion. For once the seminal residue has been excreted, it no longer produces a desire for sexual intercourse.

According to this passage, some women—namely, those with an excess of seminal residue—act on their desire for sex rather than on the outcome of their deliberation. However, Aristotle characterizes the condition as a temporary and fixable one: the production of many children will remove the excess seminal residue, and that will in turn reduce the sexual appetites responsible for this kind of weakness of will.⁶⁷ Aristotle makes a similar claim in the *History of Animals* (*HA VII 1*, 582a25–26), stating that women who are sexually lustful become more “sedate and temperate” (καθίστανται δὲ καὶ σωφρονίζονται μᾶλλον) after having given birth to three children. The condition thus seems to be much like a disease, rather than being a general defect of women, and might happen to men as well, especially during puberty.⁶⁸

⁶⁷ The experience of sexual appetites in itself is natural both for men and women (cf. perhaps *Pol I 2*, 1252a27–29, where Aristotle states that both men and women have natural impulse to come together for procreation) and is acceptable in moderate degrees and if experienced at the right time, in the right way, etc. (see *EN III 11*, 1119a16–19).

⁶⁸ See *HA VII 1*, 581b11–21; cf. *HA VII 1*, 582a22–23.

A woman's deliberative capacity being "without authority"

In his discussion of the virtues of women and slaves, Aristotle claims that the type of virtue each of these groups has matches the type of rule by which they are ruled, and that the type of rule by which men rule over women, slaves, and children is determined by the particular way in which the parts of the soul are present in them (*Pol* I 13, 1260a9–16):

For the manner in which a free man rules a slave and a husband [rules] a wife and a man [rules] a child is different, and although the parts of the soul are present in all of them, they are present in different ways (ἐνυπάρχει διαφερόντως). For the slave has no deliberative faculty at all (ὁ μὲν γὰρ δοῦλος ὅλως οὐκ ἔχει τὸ βουλευτικόν); the woman has it, but it is without authority (τὸ δὲ θήλυ ἔχει μὲν, ἀλλ' ἄκυρον), and the child has it, but it is immature. We must suppose, therefore, that the same necessarily holds of the virtues of character too: That it is necessary that all have a share in them, but not in the same way . . .

While slaves, women, and children (presumable from a certain age onward) all possess the rational part of the soul, there exists a difference with regard to the deliberative capacity that is a component of this rational in each of the three groups, and in women this capacity "lacks authority." As the context thus makes clear, when Aristotle claims that the deliberative capacity of women "lacks authority," he is thus making a claim about their internal, inborn psychological capacities.⁶⁹

In other words, whatever Aristotle means by their deliberative capacity having a lack of authority, it is not simply a deficiency that women have relative to the deliberative capacity of men, which causes their decisions to be rendered void simply as a matter of convention; for instance, because, in the society that Aristotle wrote about, men did not grant women any authority in matters concerning the city.⁷⁰ Nor is it a deficiency that women have as a result of a ranking of their field of authority that puts them below that of men; for instance, because the tasks that women have authority over are for the sake of—and hence inferior to—the tasks that men have authority over.⁷¹ Women might well suffer from both these deficiencies, but in these cases, cultural practice would be following what Aristotle believes is a preexisting,

⁶⁹ For recent defenses of this natural reading, see Fortenbaugh 2015 (p. 395) and Nielsen 2015 (passim).

⁷⁰ This is argued in, for instance, Saxonhouse 1982, Saxonhouse 1985, and Swanson 1992.

⁷¹ For this interpretation, see Deslauriers 2003.

biological differentiation between men and women that is based on a psychological deficiency women allegedly possess.⁷² Just as the absence of the deliberative capacity in the natural slave is a lack he or she has by nature and from birth, and just as the as-of-yet imperfect condition of the deliberative capacity of the child is a natural condition it has due to its biological immaturity, so too must the “lack of authority” of the deliberative capacity of women be a natural, psychological differentiation they possess from birth and that has consequences for the success of their deliberative process, regardless of the circumstances of their culture or particular situation. Therefore, in order to determine what Aristotle might have meant with his claim that the deliberative capacity of women “lacks authority,” we should turn not exclusively to his legal-political discussions, but also and perhaps especially to his moral psychology and psychology of action.⁷³

In this latter context, Aristotle commonly uses the term *kurios* to refer to the factor that has the efficient causal power that initiates action and can therefore also be characterized as a principle of action. Sometimes Aristotle uses it simply with regard to a person who possesses the principle for his own actions and is therefore responsible for them (see e.g., *EE* II 6, 1223a4–5: “such that with regard to as many actions humankind is a principle and controller . . .” [ὁ ἄνθρωπος ἐστὶν ἀρχὴ καὶ κύριος]).⁷⁴ Other times, Aristotle uses it more specifically to refer to the capacities of thought and nonrational desire as the controlling factors of action, as for instance in the following text (*EN* VI 2, 1139a17–20):

There are three factors in the soul that control action and truth (τρία δὲ ἐστὶν ἐν τῇ ψυχῇ τὰ κύρια πράξεως καὶ ἀληθείας): perception, thought, and desire. Of these, perception is no principle of action (τούτων δ’ ἡ αἰσθησις οὐδεμιᾶς ἀρχὴ πράξεως), for it is clear that animals have perception but no share in action . . .

In what follows, Aristotle goes on to identify deliberate choice (ἡ προαίρεσις)—understood as “thought combined with desire or desire combined

⁷² Cf. Reeve 2012 (p. 110, n. 8), which offers a combination of the natural and cultural reading.

⁷³ It has been suggested that the term *akuros* in Aristotle refers only to things that lack authority by convention, and that the lack of authority in women therefore must be by convention also: see, e.g., Deslauriers 2003. However, not only is this claim false (see, e.g., *GA* IV 4, 772b26–29, about hermaphrodites having one set of reproductive parts that is *akuros*), but it is also oddly restrictive to limit the lexical search to the privative uses of *kuros* only and to study these uses only in legal-political texts, especially when the term is very common in Aristotle’s moral psychology, which forms the relevant *psychological* context for Aristotle’s use of the term in the *Politics* when discussing the souls of women.

⁷⁴ See also *EN* III 5, 114b31–115a2; *EN* III 1, 110a5–6; and *EN* III 5, 113b32–114a4, on the drunks who are no longer in control of their actions.

with thought” as the ultimate principle of action relevant for the virtues (*EN* VI 2, 1139a31: πράξεως μὲν οὖν ἀρχὴ προαίρεσις).⁷⁵ The factor that has executive control over actions in these cases is therefore “like a decree”⁷⁶ issued by the deliberative branch of politics, in that it is similarly prescriptive or authoritative: a deliberate choice terminates the process of deliberation and, unless something prevents this, it is immediately followed by the action that implements this choice.⁷⁷ The person who is weak of will is thus “like a city that votes for all the right decrees and has excellent laws but does not use them” (*EN* VII 10, 1152a19–21): their deliberate choices lack their usual authority and have no practical consequences, and so either no action follows or their action follows instead the lead of their nonrational desires.

The psychological theory that explains the efficient causal power of deliberate choice and nonrational desire in human action is provided in the *On the Soul*. As we saw in chapter 5.4, for Aristotle all animal locomotion and action involves nonrational desire and some kind of cognitive activity (whether of practical thought or of imagination) as their efficient causes (*DA* III 10, 433a17–21). In humans, these primary efficient causes are appetite (i.e., a nonrational desire) and wish or choice (i.e., rational desires). Now in the case of a virtuous person, the apparent good that is the object of appetite coincides with the real good that is the object of wish, and the two capacities produce the same locomotion or action. However, there are also cases—such as in the person who is weak willed—where “the intellect orders and thought says to flee from something or to pursue it,” but where “one is not moved” and acts in accordance with appetite instead (*DA* III 9, 433a1–3). In these cases, the rational desires lack control over the nonrational ones and are defeated (*DA* III 11, 434a10–15):

For this reason, [nonrational] desire does not possess a deliberative capacity. And sometimes it defeats wish and initiates motion, while other times the

⁷⁵ The term also occurs in Aristotle’s “natural scientific explanation” of weakness of will in *EN* VII 3, 1147a24–b17. There it refers to the conclusion of a practical syllogism that is supposed to be in control of action (1147b10: κυρία τῶν πράξεων), but that is not in control in the case of a person who is weak of will due to weakness. Instead, “appetite leads” this person “on,” “since it is capable of moving each of the [bodily] parts” (1147a34–35: κινεῖν . . . δύναται). On thought and desire being in control of locomotion more generally, see also *DA* III 9, 433a4–8 (433a6–7: κυρία τῆς κινήσεως).

⁷⁶ See *EN* VI 8, 1141b23–28; *EN* VII 9, 1151b13–15 (“Opinionated people . . . are pained if their own beliefs lack control (ἄκυρα), insofar as these are like decrees”); and perhaps *EN* III 3, 1132a2–9. On this, see Reeve 2012 (pp. 167–168) and Reeve 2014 (pp. xxxi–xxxii and 302).

⁷⁷ Cf. Nielsen 2015 (p. 573), which characterizes the lack of authority of the deliberative capacity in women as an inequality between men and women in the executive power to put one’s decisions into actions.

latter defeats the other, just as a sphere against a sphere, a desire against desire, such as when weakness of will happens. But by nature the higher one is always more architectonic and initiates motion (φύσει δὲ ἀεὶ ἡ ἄνω ἀρχικωτέρα καὶ κινεῖ).

Psychophysically speaking, both wish and appetite are certain kinds of heatings and coolings of the blood, which in turn make the *pneuma* in the blood expand or contract, and these expansions or contractions make the body move. However, as Aristotle explains in the *Metaphysics*, one cannot at the same time act in accordance both with wish and appetite if they are contrary to each other (*Meta IX* 5, 1048a21–24), as is the case in weakness of will: one will have to gain control over the other.⁷⁸ In other words, whenever wish and appetite are not on a par in producing the same physiological changes in the human body, then whichever of the two has the greatest psychophysical power “wins,” “gains control,” and “issues” its preferred action.⁷⁹

In order to explain, then, what it means for women to have a deliberative capacity that lacks authority or the power to put their decisions into action, we need to turn to Aristotle’s final comment in the *DA* passage quoted above. There Aristotle claims that *by nature*, the higher desire—namely, wish or deliberate choice as issued by the deliberative part of the soul—is always the one that has power over the lower, nonrational desires, and it is this rational desire that always initiates motion and thus has the ultimate executive power. Presumably this is the natural situation for freeborn men, who are therefore by nature prone to continence. My proposal, then, is that Aristotle believes that for women, this natural situation is reversed. Perhaps also as a consequence of her lack of internal heat and spirit, her rational desires lack their natural control and executive power over their nonrational desires, especially those that concern avoidance of pain and that psychophysically speaking constitute coolings of the blood, such that women are by nature prone to weakness of will due to weakness of the kind pertaining to pain. In the case of women, it is her nonrational desires that are by nature set up “to win” and to exert power over her actions and thereby to produce predominantly

⁷⁸ See also *EN I* 13, 1102b13–28, and *EN IX* 4, 1166b7–8; cf. *EE II* 8, 1224a30–1224b2.

⁷⁹ See also *Div Somn* 2, 463b23–31, where Aristotle discusses cases in which movements produced by, for instance, one kind of weather phenomenon are overruled by a more “controlling” or “authoritative” motion (κυριωτέρα ταύτης . . . κίνησις) stemming from another weather phenomenon, such that the first no longer comes about, even if it had already produced signs in humans receptive to them. Cf. perhaps also *GA II* 6, 744b13 (τῆς κυριωτάτης ἀρχῆς) and *IA* 6, 707a8 (ταύτην τὴν τῆς κινήσεως κυρίαν), where Aristotle refers to the heart as being the (most) controlling principle of motion.

avoidance or inaction; the coolings of the nonrational desires to avoid pain temper, so to speak, the heat of rational desire to produce the right action.

Aristotle never spells out exactly what the lack of authority in their deliberative capacity means for women (besides the fact that this qualifies them for being ruled in the manner of a statesman), but if this scenario is right, then women are able to deliberate on their own and can even reach conclusions that are right. However, their deliberate choice holds no sway over their nonrational desire if this desire—however slight—opposes their wish: women will behave akratically or even badly if they do not possess all or most of the virtues of assistants. These women will not benefit much from any knowledge of the good they might have, since their wish for doing what is right will always or for the most part be overcome by their desire to avoid what is painful, and it is the latter that issues their actions. Even in the best-case scenario, where a woman's perceptive part of the soul has acquired *all* the individual virtues of assistants, and so her wish and nonrational desire align in promoting the right action, the lack of authority of her deliberative capacity makes her actions fail to express her wish in the way that is required for decision. That is, even though her actions express her virtue of character, she is incapable of giving active rational assent and doing the right thing for the right reasons and is therefore incapable of acting morally in a strict sense. Simply put: it is not her deliberate choice that issues the action, but her nonrational desire, which is naturally more controlling and powerful, and so her action fails to be virtuous in the strict sense.

In addition, it seems that because of this, marital or political rule will be required for the shaping and the preservation of the appropriate nonrational desires of women. That is, women are dependent on the authoritative choices of their fathers or husbands not just in general for offering her guidance in the general organization of her life toward the good, but also for the development of her particular virtues of character. Support for this suggestion can be found in Aristotle's account of the rational capacities: rational capacities, such as the natural character traits that humans have from birth (see *Pol* VII 13, 1332a40–b3), require desire or choice to be realized in the right direction, since these two are the controlling factors.⁸⁰ Since in women the nonrational desires are naturally stronger than their wish (even if compared to the strength of the desires present in men, their desires might well be less strong or intense due to the lack of spirit in women, and more skewed toward avoiding pain than toward

⁸⁰ See *Meta* IX 2, 1046a36–b24, and *Meta* IX 5, 1047b35–1048a24, especially at 1048a10–11: ἀνάγκη ἄρα ἕτερόν τι εἶναι τὸ κύριον· λέγω δὲ τοῦτο ὄρεξιν ἢ προαίρεσιν.

pursuing pleasure), and since these desires are naturally skewed toward vices such as cowardice, laziness, etc., they require the intervention of the authoritative choices of their husbands and fathers in order to overrule these desires and to develop their natural traits in the direction of the virtues of assistants.

In sum, if this account is true, then it also means that while the *male* child will grow up and grow out of his temporary natural imperfection regarding his deliberative capacity (that is, if provided with the appropriate kind of diet, physical exercise, habituation, and education, he can become both biologically and morally perfect), no change in conventions or education can restore the natural lack of authority or controlling power over actions in the deliberative capacity of women.⁸¹ Producing the virtues of assistants in women thus involves habituating their natural character traits in the direction of the natural virtues appropriate for them, while making their desires obedient to the choices of their male guardians. Because women are the result of a process of reproduction that involves lower levels of concoction, they are colder and lacking in internal heat compared to men. And presumably because of this lack, women are also born naturally soft and with a deliberative capacity that naturally lacks executive control over their nonrational desires to avoid pain. And because of this, women are naturally weak willed due to weakness of the type concerned with pain, cannot be allowed to rule households or cities, and will never be able to live life and flourish in a way that, according to Aristotle, constitutes the perfection of human nature.

⁸¹ The fact that the efficient causal power of the choices of women is naturally weak certainly has consequences for the role(s) women are supposed to (and allowed to) play in society according to Aristotle, but if women lack *conventional* authority over men, they do so in virtue of a natural lack of authority that belongs to their own deliberative capacity.

CHAPTER 7 | Conclusion

In his discussion of the character virtues as mean states in his *Nicomachean Ethics*, Aristotle compares them to targets, which are “easy to miss, and difficult to hit” (*EN* II 6, 1106b32–33). This is true not only for the fully virtuous person, who is perhaps like the well-trained, experienced archer, but also, and perhaps especially, for those still undergoing the process of habituation and who are therefore still on the road toward virtue. The perfection of human nature is a long and difficult process, one that requires careful interventions by parents, lawgivers, and moral educators—as detailed by Aristotle’s ethical writing—and one that starts long before a person is able to engage in virtuous activity oneself. “Nature” is the first factor in moral development, and, as it turns out, there are many natural obstacles to overcome. And although every person is urged to acquire one’s own proper natural virtues for the sake of the virtue of one’s household and city, not everyone will be able to acquire virtue—and hence happiness—in a strict sense. For women and natural slaves, and perhaps certain barbarians, the natural barriers to human flourishing are simply too large. “Habit” and “reason,” the two other factors Aristotle believes play a crucial role in moral development, have only a limited impact on and chance of success with those who lack the natural prerequisites for the development of full virtue.

For Aristotle, acquiring the virtues of character is in certain—though not all—ways similar to the acquisition of crafts, since the dispositions are produced and preserved through repeated activity. Just as one becomes a successful flute player by playing the flute often and well, so one becomes virtuous by performing virtuous actions repeatedly, until this becomes one’s second nature and a virtuous disposition of character is established. However, despite the fact that the individual virtues of character are not

straightforwardly realizations of a preexisting, natural capacity for that virtue (e.g., the courageous disposition that constitutes virtue is not the realization of the natural character trait for courage, but instead a new disposition created by the repeated performance of courageous actions), because of the way that habituation works, possessing a natural talent or having been born with a natural predisposition toward the virtuous disposition one is striving to acquire does provide obvious advantages (e.g., being naturally courageous makes it easier—and more pleasant—to repeatedly perform courageous actions and thereby to acquire the individual, virtuous disposition for courage). The natural character traits one has from birth pull a person in one direction or another, toward or away from the appropriate mean, and those who are by nature courageous and intelligent are the easiest to habituate and bring to virtue: they already, always or for the most part, and by nature take pleasure in the actual good, desire the right things, and make the right decisions, despite not yet having practical wisdom and not yet acting out of stable dispositions. Note, of course, that Aristotle's claim is not that such people will always or necessarily be successful at habituating themselves toward becoming virtuous in the strict sense: the claim is rather that it is *easier* for them to acquire the individual character virtues, and that this brings them one step closer to virtue in the strict sense. Virtue in this sense requires the additional development and integration of practical wisdom, acquired through moral education, and a kind of change and reorganization of the parts of the perceptive and the rational parts of the soul that Aristotle calls perfection: only when all the constitutive capacities of the perceptive part of the soul are in their best condition and are proportionally organized—internally with a view to each other, and externally with a view to the deliberative part of the soul that possesses practical wisdom as its virtue—does virtue in the strict sense come to be.

In addition, Aristotle sometimes compares political science to a kind of productive craft, and lawgivers to craftsmen: it is their task to perfect human nature and to produce cities that exist for the sake of well-being, by using men with good natural character traits as their materials and by implementing the right kind of constitution and laws as the form of the city. Making men good and capable of fine deeds is thus not something to be left up to chance or nature alone: it requires a special kind of *political* skill and wisdom as well as being well educated in the basic *biological* facts of human nature and life. For instance, while lawgivers do not need to possess a causal understanding of how the individual natural character traits men have from birth are produced by their particular mixture of blood, knowing that men with

certain natural character traits are easier to habituate while men with certain other traits are more difficult or even impossible to habituate is essential to their success in producing an ideal city. Similarly, knowing that these traits undergo changes of the more and the less under the influence of factors such as age, disease, climate, and diet is important for that very same reason. Accordingly, because not even all *free* men are born equally, Aristotle encourages lawgivers in his *Politics* to recruit those men as the first citizens of their ideal cities who have character profiles that are well mixed and who are both naturally courageous and intelligent. Most of these men can presumably be found in the region around Athens, which is famous among Aristotle's contemporaries for its well-mixed climate, and presumably these men will be tall and healthy, following a balanced regimen of diet and exercise, and will not be too young or too old of age. Aristotle does not mention exactly how lawgivers are supposed to identify these men in practice, but in other contexts he seems attracted to physiognomic views that associate outward mathematical proportion with inward goodness, so perhaps it is the (pseudo)science of physiognomy that lawgivers should turn to in order to help them with the identification of the best "raw materials" for the city. Because of the importance of good natural character traits for the chances of success in producing virtuous men and cities, Aristotle also provides recommendations to lawgivers for the implementation of an elaborate eugenic program, which has as its purpose to promote the birth of male, strong, tall, and healthy offspring, which is needed for the continuation of the city. Lawgivers and prospective parents alike are to take their benefit from biological facts, provided by the natural scientist, about sexual reproduction concerning the production of male offspring resembling their fathers.

The path from natural character to moral virtue, then, is long, complex, and multifaceted. It starts with one's freeborn parents producing offspring at the right age (namely, when their bodies are at their prime), at the right locale (environments with well-mixed climates are best), and when winds are blowing from the right direction (northern winds are best because they promote the birth of male offspring). If the natural teleological process involved in sexual reproduction takes place without any material-efficient disturbances and thus if the male principle provided by the father is able to impart the human form in the way it is realized in him into the female menses, a male offspring is born who resembles his father. And if the mother's blood is of high quality and if she is able to pass on her material nature to her offspring, perhaps while the material-efficient changes imparted by the father also contribute to and do not take away from its well-mixedness, her offspring will

have the kind of quality of blood that gives rise to natural character traits that are beneficial for the acquisition of virtue (although, presumably, her offspring's material nature will be slightly too hot at birth, while reaching perfect well-mixedness most likely at or around the time of physical maturity). This kind of offspring is best: only freeborn, male offspring can be raised as citizens of an ideal city, and only these men possess the natural prerequisites that make moral development not only possible but also easiest.

Any kind of disturbance in the process of reproduction, from the father's or the mother's side, may result in "deviations from the form," and the offspring may turn out female. While females are functional products of the process of concoction involved in reproduction, Aristotle argues that they are inferior, and that their existence—although necessary for sexual reproduction—is "for the better": nature "uses" them for the separation of the inferior principle of reproduction from the superior one (which is present in males), and it is a general teleological principle of nature that it is always better, when possible, to separate the superior from the inferior. Because women are in a sense the products of a (slight) failure of concoction, they are lacking in natural heat relative to men and are therefore by nature colder, spiritless, soft, and less intelligent. For their moral development, this lack of internal heat and spirit means that the virtues of character they can acquire must be of a different kind than the ones acquired by men: women can acquire the virtues "of assistants" only, since they are in a natural position of always being ruled and dominated, and their virtues are for the benefit of their husbands, households, and cities rather than for their individual flourishing. And perhaps also as a result of this same lack of internal heat and spirit, the deliberate choice issued by their deliberative capacity lacks its normal executive power over nonrational desires to do what is right, while their nonrational desires are overwhelmingly of the kind involving fear and are targeted at the avoidance of pain, making women prone to a certain type of "weakness of will due to weakness" and unable to acquire practical wisdom. With the exception of a few women who have excessive sexual appetites due to excesses of seminal residue in their bodies, women are not typically prone to weakness of will due to impetuosity; their natural flaws lie in inactivity and avoidance, not in rashness. However, because of all this, women, at least for the most part, cannot become virtuous and therefore also cannot become happy, in the strict Aristotelian sense. Their moral upbringing serves not themselves but the good of the household and the well-being of its freeborn, male members, and hence ultimately the good and happiness of the city.

Natural slaves are in a similar though not identical situation. Aristotle does not specify what disturbance in the process of reproduction is responsible for the birth of natural slaves, or exactly where they live, if there is any geographic area to be identified at all: nothing in the text suggests that Aristotle thinks that there is an intrinsic connection between being part of a certain ethnic *genos* and being a natural slave, although most likely natural slaves will be barbarians and not Greeks. However, the fact that natural slaves are born without a deliberative capacity at all means that the kind of character virtues they ought to acquire are also specific to being a natural slave, and that natural slaves, too, primarily serve the flourishing of their masters, households, and cities rather than their own: just like (most) women, natural slaves are unable to become practically wise and therefore virtuous and happy in the strict sense.

However, for those who are born free, human, and male and are preferably from good birth, naturally talented, and well mixed in terms of their material nature and hence their natural character profile, Aristotle recommends that lawgivers see that the perfection of their human nature starts immediately after birth. Habituation in its earliest form includes practices such as dipping babies in cold water (to produce strength and natural courage) and regulating their diet (e.g., drinking milk to produce a military disposition) as well as physical exercise, in ways that are very similar to forms of habituation found in the animal world. However, soon it is followed by a more extensive educational program that includes the appropriate levels of gymnastics and the right kinds of imitations in play, exposures to good models, and musical training: young boys learn to take pleasure in the performance of actions that are virtuous, to perceive the actual good as good for them, and to judge characters and actions in the right way. As young adults, they continue their path toward virtue by continuing to perform virtuous actions, but they are also to receive moral education, with the aim of making them practically wise as well as virtuous in character. Natural character traits are “dualizing” rational capacities, and what turns them into the individual, stable, virtuous dispositions is the frequent realization of them in the direction of virtue, and this happens “by desire or choice.” Presumably, then, this kind of stabilizing of good natural character traits one has from birth (or, a kind of overcompensating and a frequent pulling into the opposite direction in the case of character traits that are not good) first happens under the moral guidance of others, who tell or show them where to aim and what to do, but eventually the young men will be able to perform these actions and produce the relevant special alterations of their natural character traits themselves

and by choice. Ultimately, once all the capacities of the perceptive part of the soul have undergone the appropriate qualitative changes so that they all are in the best condition possible, and once these reach an appropriate relation to each other and to practical wisdom, their human nature reaches its perfection, and a virtuous man has come to be. And it will be his task to make others good and capable of fine deeds as the educator, lawgiver, head of the household, and father of a next generation of well-born, free men—the truly lucky ones.

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