

# Material Vicissitudes and Technical Wonders: The Ambiguous Figure of Automaton in Aristotle's Metaphysics of Sexual Difference

EMANUELA BIANCHI  
Haverford College

**ABSTRACT:** In Aristotle's physics and biology, matter's capacity for spontaneous, opaque, chance deviation is named by *automaton* and marked with a feminine sign, while at the same time these mysterious motions are articulated, rendered knowable and predictable via the figure of *ta automata*, the automatic puppets. This paper traces how *automaton* functions in the Aristotelian text as a symptomatic crossing-point, an uncanny and chiasmatic figure in which materiality and *logos*, *phusis*, and *technē*, death and life, masculine and feminine, are intertwined and articulated. *Automaton* permits a mastery of generative materiality for teleological metaphysics, but also works to unsettle teleology's systematic and unifying aspirations.

In *On the Generation of Animals* (henceforth *G.A.*), Aristotle famously states that "we should look upon the female state as being as it were a deformity, though one which occurs in the ordinary course of nature" (775a15–16).<sup>1</sup> This pronouncement, extraordinary as it is to the twentieth-century eye, reveals in its short formulation the barest outlines of a grand scheme, at once metaphysical, physical, biological, ethical, and political. It assumes, minimally, that there is a hierarchy between perfection and deformity, and that the female state deviates from an assuredly masculine perfection. This deviation is, however, sanctioned by nature. Nature admits deformity, error and disfigurement, and its name and mark is female. Nature not only generates a diverse and

and activity/passivity that form the basis of both traditional and feminist accounts of the theory of causation and of Aristotle's entelechial system more generally. The uncanny and symptomatic figure of *automaton*, which both resists explanation and provides it, thus lies at the boundary of the knowable, the boundary of the possibility of science, *epistemē*, and both unsettles and provides assurance to the security of the philosopher who seeks to discover the why of things, *to dia ti*.<sup>7</sup>

The notion of the symptom bears multiple significance here. Symptom in the first instance carries its modern meanings, common to medical and psychoanalytic usage, of an observable phenomenon which indicates or discloses an underlying dysfunction or disease, a disruption in the normal course of things pointing to a problem that demands, through the appearance of the symptom, to be addressed. In this context, then, it will refer to something recurrently problematic manifesting in the texts, apparently peripheral to their main concern, but which presents a dysfunction, gives a sign of dis-ease, poses a threat of disruption to the philosophical system at hand that may lead to the unraveling of the very systematicity of the system. At the same time, the symptom comes not from elsewhere but is generated by and native to that system, a symptom, perhaps, of the very desire for or aspiration to systematicity.<sup>8</sup> Behind and anterior to this modern sense of symptom lies the Greek word, *sumptōma*. While occasionally found in a medical context, the more common meanings of *sumptōma* are, according to Liddell and Scott, 'anything that befalls one, a chance, mischance, calamity,' from *sum*, together, with, *pipō*, to fall, hence 'to fall together with.' It may also be translated as 'coincidence,' whose Latin etymology (*co*, together, with + *in* + *cadere*, to fall) is cognate with the Greek.<sup>9</sup> *Sumptōma* can usefully be contrasted with Aristotle's *kata sumbebēkos*, the phrase most frequently translated as "accident" and opposed to essence, from *sumbainō*, to walk together, hence "according to walking alongside." It would seem more random and even less predictable, certainly more chaotic than the polite walking together of the *kata sumbebēkos*. Items that fall together fall where they may, crashing to the ground without a guiding path, while walking, traveling a path, requires a certain regulation of movement, volition, certainly directedness, and perhaps even consciousness or freedom. Falling is unforeseen, undesirable, unwilling, automatic. It points to a disruption, a break in the normal course of events. More than non-essential, it is unexpected, remarkable, surprising, potentially harmful, tragic, and shattering. The *kata sumbebēkos* contains in its signification activity, an internal, intimate, proximal relation to self-motion, to a separable moving force, and in entelechial terms a

marvelous plurality of forms, but also subtends a hierarchy of value in which perfection is aligned with the good, and any deviation from it is less than good, lacking, fallen, if not outright malign. In Aristotle's medieval legacy, we find the Christian God, God the Father, standing at the metaphysical center of the cosmos, embodying all that is Good, Perfect, Eternal and Complete while woman, standing for corruption, imperfection and mutability, is located firmly in the temporal world of fate, fortune, worldly temptation and pleasures.<sup>2</sup> Concepts of sex and gender are thus intertwined with a fundamental metaphysical architecture that has commanded a cultural ascendancy in the West spanning approximately 1800 years, waning with the scientific revolution although not disappearing entirely.<sup>3</sup> This imbrication finds its direct source not only in Plato's radical ontological hierarchization between the eternal, unchanging realm of the forms and the world of temporality and change, but also in the grand systematicity of Aristotle's teleological cosmos.<sup>4</sup>

The masculinist biases of Aristotle have been widely documented and diagnosed; these feminist readings of Aristotle's biology, physics and metaphysics typically focus upon the form/matter distinction in Aristotle, and the alignment of the male or masculine principle with form and the female, or feminine principle, with the material cause.<sup>5</sup> And not without good reason. In G.A. (e.g., at 716a6-7), Aristotle clearly states that in sexual reproduction the male contributes the form, which acts as the principle of movement and generation, and the female contributes the matter. The formal cause is the active principle in nature, and in "man" the form is constituted by the rational soul. Matter is, on the other hand, the passive recipient of any given form. Very quickly and schematically, the groupings "form/male/active/rational" on the one hand and "matter/female/passive/irrational" on the other are seen to form a natural hierarchy of value which is repeated and elaborated in elsewhere in Aristotle, notably in book 1 of the *Politics*, where it is asserted that men are the natural rulers of women.<sup>6</sup> In this way, there appears to be a simple and dogmatic declaration of the subordination of women to men, which is manifested repeatedly in the various subject areas of Aristotle's inquiries. Upon closer examination of Aristotle's theory of sexual reproduction and the causal forces working therein, however, a slightly different, more complex picture of the relation of sex and gender to his biology, physics, and metaphysics emerges. In this paper I seek to show that the figure of *automaton*, not only Aristotle's word for chance, but also a technical analogy by which certain obscure biological processes are clarified, functions *symptomatically* in the Aristotelian text, and disrupts the systematicity of the pairings form/matter

more exalted position vis à vis the metaphysical source of motion, the prime mover, than the falling of the *sumptōma*. In addition, to walk is to be upright; to fall or having-fallen is to be supine. *Sumbainō* is on a path, on the way, and therefore at least potentially entelechial. *Sumpiptō* is no longer on any way, it is to be by the wayside. The falling here is also a “falling with”; the “with,” at the same time, itself indicating and presupposing a non-unitary multiplicity, a plurality or at least duality which must pertain in the cosmos as the condition of the coincidence. The symptom read as *sumptōma*, then, is itself intimately allied with luck and chance; indeed Aristotle himself occasionally uses *sumptōma* as a synonym for *automaton* in the discussion of luck and chance in the *Physics*, and elsewhere, particularly in contexts where there is a relation to women and femininity.<sup>10</sup> Unknowable and exceptional, the feminine symptom at once stands beyond, but also shows the way, gives a sign through which the Aristotelian metaphysical system may be diagnosed and understood.

In addition to his account of the four essential (*kath' hauto*) causes—formal, efficient, material, and final—Aristotle must distinguish them from other kinds of causes; accidental (*kata sumbebēkos*) causes, luck (*tuchē*), chance (*automaton*), as well as give an account of the nature of necessity (*anankē*). Although accident and luck are rich topics in their own right, this paper will explore the third of these concepts, *automaton*, in depth, and provide an excursus on the fourth, *anankē*. *Automaton* in this context means chance in the broadest sense, exemplified by the kind of randomness inhering in the natural world. But *automaton* also appears as a technical analogy in Aristotle, notably in G.A. and *De Motu Animalium*, to help to describe and explain a number of biological processes, including that of sexual reproduction, through the figure of *tautomata*, automatic puppets. The *tautomata*, also called “wonders,” *tautomata*, are technically complex mechanisms made up of ropes and pulleys, operated by the introduction of a small initial motion, leading to the appearance of a “miraculous” series of movements, apparently spontaneous and self-directed. They are described in detail much later in antiquity by authors including Galen and Heron of Alexandria, but it is indeed these *tautomata* that are responsible for creating the famous shadows in Plato's cave.<sup>11</sup> For Aristotle, then, *automaton* is both a name for the unpredictable, unknowable vicissitudes of matter, that which escapes and exceeds knowledge, *logos* and teleology, and a figure for a technical mastery so complete that it causes great wonder in any who observe it, and through which we are ultimately assured the full explicability of *technē*, *epistēmē*, and *logos*. Through the ambiguity of

*automaton*, Aristotle will articulate and figure opaque, feminine matter, rendering it knowable and calculable for the teleological system, while simultaneously placing it beyond the reach of teleology in the realm of chance. *Automaton* is therefore a crossing-point, a chiasmatic figure in which materiality and *logos* are intertwined and articulated, through which materiality becomes knowable, its unmasterable opacity at once disclosed, and in the very act of disclosure and figuration clarified and mastered. *Automaton* as chance and coincidence, however, also names that which is beyond and outside the knowable science of essential causes, forever immune to clarification and full disclosure.

Necessity too, plays a crucial role in Aristotle's account of sexual reproduction, and I will show in an excursus how the scene of sexual reproduction reveals the inadequacy of Aristotle's commonly cited twofold account of necessity as simple, *haplous*, on the one hand and hypothetical, *ex hupotheseōs*, on the other. The kind of necessity inhering in the random motions and deviations of matter stands outside this typology and can only be identified and defined negatively as a compulsion or force, *bia*, against the necessities of the teleological system. Once again, sexual reproduction is the site where the necessities of matter and those of teleology may be most clearly seen to both separate, and cross over into one another. The scene of sexual difference in sexual reproduction as figured by *automaton* and *anankē* is therefore characterized by a crystalline separation of causes; form and matter, active and passive, male and female, but also discloses chiasmatic and uncanny ambiguities at the heart of the Aristotelian system; *phusis* crosses over into *technē*, material necessity crosses over into teleological necessity. Nature, generation, and life understood in a orderly and organized masculine teleological framework are haunted by the blind, random, feminine motions of *automaton*, that we may read in a psychoanalytic register as signifying the automatic, directionless repetitions of the death drive, threatening the libidinal forward thrust, the efflorescence of life.<sup>12</sup> On the other hand, we might also understand the operations of dead technology, the automatic puppets, as offering a guarantee that the opaque pulsings of living feminine generativity may be captured in our understanding, according to the *logos*, and the privations and mutilations, the castration it threatens, thereby mastered. These various chiasmatic articulations signified by *logos*, *hulē*, *automaton*, *bia*, the joints of animals and the automatic puppets, disclose a haunting of life by death in the Aristotelian sexual scene, a “sex appeal of the inorganic” as Foster (1993: 152) puts it in his discussion of the automaton in surrealism. We may also discern, here, an anxious masculinity at work, eager to consolidate its systematicity

perpetuation. The teleological system thus necessitates their existence in order that the cycles of generation and destruction which characterize nature might continue. The second explanation involves, rather, the appearance of a kind of error in the mechanism of reproduction, in which the male fails to "gain the mastery." According to the "concoction" theory, the correct heat of bodies and fluids is an essential factor in the successful completion of the reproductive cycle. Proper heat is required to create males, while females result from a lack of heat. In certain situations, such as youth or old age or some other chance circumstance, the semen may not be at the correct temperature for its proper functioning. A small deviation from the ideal temperature will create a female; a larger deviation will create occasional "freaks of nature" or "monstrosities": calves with two heads, babies with six fingers, and the like.

In this way, femininity can be seen to function as a sign of, a figure for, masculine failure. Some failure or fault in the concoction of the offspring, a lack in the male in which the vagaries, the *automaton*, of matter and motion are manifested, results in a departure from type, *existasthai*—a violent destruction and unmaning, as the masculine form is ousted from its standing position, and is transformed into its feminine opposite. However, as we have seen, this chance deviation, this *automaton*, is not strictly in vain, *matēn*, since it is necessary to the perpetuation of the species and thereby contributes to the teleology of nature. Furthermore, another kind of necessity is also stated to be at work here; Aristotle follows his description of the teleological necessity in reproduction with the following: "As for monstrosities, they are not necessary so far as the purposive or final cause is concerned, yet *per accidens* (*kata sumbebēkos*) they are necessary, since we must take it that their origin at any rate is located here" (767b13–15). How are we to understand this contradictory accidental necessity, this 'necessary accident,' whose activity is so crucial to the teleological perpetuation of the species? What relation does it bear to teleological necessity or simple necessity?

## II. ARISTOTELIAN NECESSITY: AN EXCURSUS

Necessity, *anankē*, is discussed by Aristotle in various places: in the final section of *Physics* 2, in *De Partibus Animalium*, G.A., *De Generatione et Corruptione* (henceforth *Gen. et Corr.*), as well as in the *Metaphysics*. For the most part, Aristotle gives a twofold typology of the kinds of necessity that can be observed in the world: hypothetical (*ex hypothesēōs*) necessity, and simple or absolute (*haplous*) necessity. However, it is not always easy to pin down the meanings of these terms. At first sight, we may be

against the monstrous and uncanny disruptions of feminine matter, in its castrating capacity for privation and deformity.<sup>13</sup>

According to Aristotle's discussion in the *Physics*, *automaton* is not knowable in itself and has no positive determination; we may speak of chance as a cause but it does not, strictly speaking, cause anything in its own right. It rather receives its definition in relief against, and in relation to the four essential causes and the teleological regime within which they are understood. *Automaton*, from *auto-* plus *mataō*, to be idle, to loiter, to be in vain (the related adverb *matēn* means in vain, idly, foolishly, senselessly, at random, false), is a wider predicate than luck, *tuchē*, which is the result of choice and action in the human world. *Automaton* thus refers primarily to the unchosen activities of the natural world, occurrences that happen to no particular end, and for no particular reason, in vain; unpredictable motions, coincidences and proliferations immanent in matter which are immune to knowability through science, *epistēmē*, and to the possibility of enumeration and calculability, signified by *logos*. Aristotle therefore grants neither epistemological nor ontological status to *automaton*; it is outside and beyond the purview of science and of being—we may attribute many things to chance, but, strictly speaking, in itself, it does not exist.

### I. CONCEIVING OF A GIRL

In 3, 11 of G.A., Aristotle describes both sexual reproduction and the spontaneous generation of various creatures using the term *automaton* (esp. 762a9). In sexual reproduction the male semen implants the active principle of movement, and the *logos* of sentient soul as potential for form, into the matter provided by the female. This diremption of form and matter in the reproductive scene therefore accomplishes a radical separation between active and passive elements. The relative formlessness of menstrual blood, however, is a necessary requirement in the reproductive process in that it is to be enformed by the male principle, and thus cooked or "concocted" in the womb, according to Aristotle's concoction theory of reproduction. Here we can see the relevance of Luce Irigaray's question, "how can a girl be conceived?" (1985: 167); for if the form is always provided by the male, masculine principle, it remains a mystery how a female child may result, or indeed of how any child might resemble his or her mother or ancestors on the female side. At 4, 3 767b3–15, two different, and apparently discordant, explanations are given for the existence of female offspring. First, any species in which sexual reproduction takes place relies on the existence of females for its

sity, that which cannot be otherwise, is explicitly not identified with the forceful, contrary, disruptive necessity that inheres in matter.

These discussions show that the primary sense of necessity, that which cannot be otherwise (*to mē endechomenon allōs echein*), therefore applies simply and without qualification (*haplōs*) to the prime mover, which simply cannot be and never is otherwise. However in the sublunary sphere, where things can always be otherwise, necessity still operates, though not simply. In the case of the existing and the good, necessity issues from the existence of the creature and the desirability or good of the goal. This is quite clearly the hypothetical necessity referred to in the *Physics* 2. Hypothetical necessity is characteristic of everything that comes to be, and is perhaps best understood as that which issues from the 'for the sake of which' or final cause, both in nature and in art. The final cause exerts necessity in that it specifies the kind of thing that is needed for its realization, for example, the dentition of an animal is necessarily the way it is *for the sake of* tearing flesh and grinding food, or if a saw is to be made, in order to fulfill its function as a saw it must—of necessity—be made from certain metals with certain qualities. However, there is also another kind of necessity which operates in the things that are necessitated by the good or the creature. As long as these needs are present and available for that which they are required they do not show themselves qua necessary, this necessity is only revealed in force, or compulsion—that which is against nature or the good and hinders, prevents, and disrupts. If there is a drought and the animal cannot eat, it is subject to the necessity of force which overcomes the hypothetical necessity of its existence, and dies.

If the two kinds of necessity are simple—characteristic of the prime mover, and hypothetical—characteristic of everything that comes to be, how may we then understand this kind of forceful necessity that acts against nature? Aristotle begins his treatment of necessity in 2, 9 of the *Physics* by asking whether what exists exists by hypothesis, or also simply. He then dismisses the idea that the kind of necessity that operates in coming-to-be can be inherent in the material properties of things: "Although a wall is not constructed without these [suitable materials, heavy at the bottom and lighter at the top], still it is constructed not because of these (except in the sense that they are causes as matter) but for the sake of sheltering or preserving certain things" (200a5–7).<sup>15</sup> This would seem to indicate he is considering the kind of necessity that issues from the properties of different kind of matter, without which coming-to-be would not occur, as simple necessity, if only to argue against its significance in the process of coming-to-be since it is superseded by

tempted to understand these terms as referring on the one hand to the necessity that must function to fulfill a given *telos*, and on the other the necessity inhering in matter and its motions, the "accidental necessity" that creates monsters and females, the necessity of *automaton*, which we might also seek to identify as the material necessity of the Atomists. Indeed Peck, in a footnote to the passage in *G.A.* we are considering, writes, "this is an instance of a necessity enforced by the nature of the Matter" and refers us to Aristotle's twofold typology of simple and hypothetical necessity (402n). However, *pace* Peck and other commentators, Aristotle is notably very careful to avoid any such formulation as a positive determination of simple necessity. At *Metaphysics* 5, 5, in the chapter of definitions, "necessary" is defined more comprehensively, in four ways: first as that without which a thing cannot exist—necessary for existence—as in the case of those things necessary to sustain an animal's life; secondly as that without which some desired good cannot come to be, necessary for the sake of the good; thirdly, as a force (*bia*) which disagreeably hinders, prevents, and disrupts impulse (*hormē*), choice (*prohairesis*), and calculation (*logismos*); fourthly, simply as "that which cannot be otherwise" (1933: 1015a35).<sup>14</sup> This last is said to be that in virtue of which all the other kinds of necessity are said to be so. Thus, in the cases of the living and the good both the cause (the animal, the good) and those things and conditions without which they could not come to be are necessary. The necessity characterized by force cannot be otherwise, because if it were, then the choice or tendency or calculation that it hinders would come to pass. Also, this definition of necessity holds good for mathematical and logical demonstrations; they simply cannot be otherwise. Aristotle then states that necessary things can be divided into ones which have causes in something not themselves, but in another or other things, and ones where there is no distinct cause. He concludes that "the necessary in the primary and main sense is the simple," and that if "there are things which are eternal and immovable, there is nothing compulsory (*biaion*) for them and nothing against nature" (1015b12–16). Elsewhere in the *Metaphysics* (book 12) he gives a threefold typology, and writes, "For necessity has all these meanings: that which is by constraint because it is contrary to impulse; and that without which excellence is impossible; and that which cannot be otherwise, but is absolutely (*haplōs*) necessary" (1935: 1072b12). Here, the second meaning, "that without which excellence (*to eu*) is impossible," would seem to correspond to hypothetical necessity: that which is necessary for, is the *sine qua non* of, a desirable or excellent result. Simple neces-

the kind of necessity that is “for the sake of which.” Indeed Peck argues in his introductory remarks to *G.A.* that simple or absolute necessity is that “involved in the Material and Motive Causes as a reassertion of themselves by these Causes against the Final Cause and against Nature as she advances towards her achievement of it” (xlii–xliii), and in support of this he quotes from the chapter of the *Physics* under discussion thus: “It is evident, then, that the necessary in natural things is what we call ‘matter’ and also the motions of matter” (200a32–33).

However, at *Gen. et Corr.*, 2, 11, he asserts that if the generation of anything is due to simple necessity, “it must be cyclical and return upon itself” (338a4–5). Further: “It is in cyclical movement and cyclical coming-to-be that absolute [simple] necessity [*to ex anakēs haplōs*] is present, and if the process is cyclical, each member must necessarily come-to-be and have come-to-be, and if this necessity exists, their coming-to-be is cyclical” (338a14–17). The Prime Mover, the unmoved mover of the superlunary sphere, which is pure actuality, form, eternal, unalterable, pure intellect, pleasure, wonder and Good, is the divine provenance from which the simple necessity of cyclical motion issues. Nature always acts *for the sake of* something or for what is better: the cycles of generation and destruction observed in nature issue from and imitate the cyclical motions of the heavens, which in their perfection and eternity are better, closer to the good, than the vagary-filled cycles of the sublunary sphere, into which accident and force can intervene to cause rains in summer, and heat-waves in winter, as noted at *Gen. et Corr.* 2, 10. Taking this view, the kind of necessity inhering in matter, that either fulfills the condition of hypothetical necessity, or fails to fulfill it and thus appears as force, cannot be a candidate for simple, absolute necessity.

In an extended commentary note to his translation of *De Partibus Animalium*, Balme argues that the proposition that material necessity is absolute or simple (*haplous*) gives rise to an untenable dualism that renders teleology toothless. He says that if material necessity is posited as a factor in generations, there is no meaning left for the final cause, the ‘for the sake of which’: “Horns are formed out of material which is ‘flowing upwards of necessity’ (*P.A.* 3 663b34): are we to suppose that the necessary movement stops at a point and some other force takes over, and if so what force?” (Aristotle 1992, 79n).<sup>16</sup> But if this kind of necessity in matter and its motions is not simple, *haplous*, necessity, how are we to understand it? It is clear that it is a significant force that is able in certain circumstances to exert itself against the demands of

hypothetical necessity, and which in fact acts in profound antagonism with it. At *G.A.* 4, 8 778a7, Aristotle writes that:

Nature’s aim, then, is to measure the generations and endings [*teleutas*] of things by the measure of these [heavenly] bodies, but she cannot bring this about exactly on account of the indeterminateness of matter [*tēn tēs hulēs aoristian*] and the existence of a plurality of principles [*pollas archas*], which impede the processes of generation in nature and destruction, and so often are the causes of things occurring [*sumptiomōn*] contrary to Nature.

Aristotle here gives us clues as to how to understand the disruptions, hindrances and conflicts characteristic of necessity in the sublunary world: they arise from a privation of determinacy, a lack of boundary (*horos*) in matter, as well as the multiplicity of the beginnings or principles (*archai*) of motion, and as such appear as the *sumptōmata*, the chance occurrences, falling together where they may, not only of nature, but *against* nature.<sup>17</sup> The necessity of matter and its motions is precisely *not* simple necessity, which could not be otherwise; on the contrary it gives the possibility that things in the sublunary world can *always* be otherwise, can always admit of alterity, that there is a continual restless agonic struggle for and against fulfillment of *teloi*, both in the natural and human worlds. Indeed, matter constitutes the very possibility that a thing might both be and not be, it is the very condition of possibility of coming-to-be and passing away: “Now all things which are generated, whether by nature or by art, have matter; for there is a potentiality for each of them to be, and also not to be, and this potentiality is the matter in each” (Aristotle 1933: 1032a20–23). Because matter and final cause are both causes *kath’ hautō*, they must both, Aristotle says, be given by the physicist who seeks the why of things; but he is clear on the hierarchy between them: “the final cause [must be given] more so than the cause as matter, for it is the former which is the cause of the latter, not the latter, of the end” (1969: 200a33–34). Aristotle therefore does not dignify the necessity of matter as such in his various typologies of necessity. The necessity of matter is revealed only in privation, in force or compulsion (*bia*) against teleology. It can only appear as such parasitically, in relation to the kind of proper necessity that issues from final causes, and is defined negatively against them.

We can see, then, a notable and significant avoidance on the part of Aristotle to give material necessity, the necessity inherent in matter and motion, the necessity of *automaton*, a positive determination in its own right. Reading this typology of necessity back into the scene of sexual reproduction with which we started, we can see that it is precisely in

effecting this exclusion of disruptive material necessity from the field of proper necessity, in the attempt to suppress and overcome the disruptive necessity inherent in matter, that this necessity returns, by accident, by chance, or symptomatically, to serve the teleological function of giving rise to a female offspring.

### III. CONCEIVING OF A GIRL, CONTINUED

Returning to the scene of sexual reproduction, we can see that the disremption of form and matter in male and female residues creates an additional problem for Aristotle. In Aristotelian coming-to-be, matter is the passive substrate which accepts different forms. It has no source of motion in itself, no ability to initiate change; its only capability is to admit of form and its privation, to give up a previous form to accept the coming form—the lump of clay gives up its lumpiness to accept the form of the pot. If the matter of the menses, prime matter, *protē hulē*, as Aristotle calls it, is devoid of form, *logos*, and structure (as far as that is possible), where is the potential form for female offspring and maternal characteristics to be found? How can it be that the parts of the embryo are present potentially (*kata dunamis*) in this matter, as Aristotle states? And how can this *protē hulē* hold within itself the means to articulate, transmit, and sustain over time embryonic development? These inexplicable potentials and processes are made thinkable by Aristotle through the analogy with the automatic puppets and their preordained transformations. The male supplies the principle of motion, and having done so, one event of fetal concoction follows on from the other “just as it does so, in the ‘miraculous’ automatons” (1942: 741b8).<sup>18</sup> If we were not apprised of the presence of the *archē*, the motive force of the semen, it would appear as if miraculous, like the illusion created by automatic puppets.<sup>19</sup>

The mysterious chain of events observed in fetal development is ascribed to a capability, a *dunamis*, inherent in the menstrual blood. This matter, this *protē hulē*, is thus now imagined to harbor extensive powers akin to those demonstrated by the complex structure of automatic puppets. That *protē hulē* should contain the potential for the complex chain of development leading to the generation of all the parts of animals is indeed miraculous, and it is an index of the profundity of Aristotle’s masculinism that he attempts to account for the mysteries of this feminine *dunamis* on the analogy of technical feats, the result of masterful masculine *technē* and *poiēsis* rather than *phusis* and *genesis*.<sup>20</sup> He goes on to give two ways of understanding the source of motion in

the embryo “in one way it is an external agency [i.e., the sperm] causing the thing’s movement . . . by having at one time been in contact with it.” But “in another way, it is the movement resident within, just as the building of a house for a house” (1942: 734b13–18). This movement within is not given by the female, is not motion residing in the menses, any more than the motion of building of the house is inherent in its bricks. The additional technical analogy suggests rather the motion of the composite toward its telic actualization, the productive actions of *poiēsis*. The embryo here now apparently contains its own source of motion in its own substance or being: on the technical analogies of the automatic puppets and of housebuilding, its own soul principle and *logos* provide the ordering and directing motive force for development, allowing Aristotle to gloss over the issue of whether the menstrual blood itself provides any motive force.<sup>21</sup>

### IV. GENESIS AUTOMATOS

While *automaton* certainly plays a key role in the explanation of mechanisms of sexual reproduction, Aristotle also uses *automaton* to describe an entire class of reproductive phenomena: spontaneous generation, or *genesis automatos*. He focuses in particular on a class of creatures, the *ostrakoderma* (literally, animals with earthenware skins), animals with shells including bivalves and gastropods: snails, whelks, oysters and the like.<sup>22</sup> These liminal creatures pose a problem for Aristotle because they are clearly animals, possessing sentient as well as nutritive soul, but they are not divided into male and female nor, as far as he is concerned, do they reproduce sexually. In spontaneous generation, there is no easy way for Aristotle to separate active, motive causes, and the material components of the creature that is coming to be. Rather, he classes them as either generating from themselves like plants, or generating spontaneously (*automatōn*) from the environment. In sexual reproduction, the semen’s soul-principle, and thus its capacity as the vehicle of form, is explained by its possessing *pneuma*, translatable as breath, air, or spirit. *Pneuma* is the earthly analogue of *aithēr*, the element of the stars, and its presence is evidenced by the generative power of the heat of animals, and of the heat of the sun, as described in *De Caelo*, 1, and in *G.A.* at 2, 3 737a3. The *pneuma* is combined with water as a foamy concentrated mixture to form the residue that is semen, but we are now told it is also found in environmental water. In the case of the spontaneous generation of the *ostrakodermata*, the soul-heat in the frothy slime of putrefying sea-water and earth, combined with the seasonal heat in the environment, causes

concoction and congealing, and once a portion of the soul-principle 'gets enclosed' in this way, the *pneuma* "makes a fetation and implants movement in it" (1942: 762b16–18).

In contrast with Aristotle's many explicit statements regarding the passivity of matter without a source of motion in itself, in the phenomenon of *automaton* matter appears not only as a passive receiver of external motion, but also as containing its own kind of motion; opaque, plural, unaccountable. In an extraordinary statement at *Metaphysics* 7, 9, which contradicts almost everything that is said of matter elsewhere, he writes:

But things by nature which are generated spontaneously [*automatou*] [by chance] are, as in the previous case, those whose matter can be moved also by itself in the way in which it can be moved by the seed; but things without this capability cannot be generated otherwise than by things like themselves. (1034b5–7)<sup>23</sup>

What is this "previous case" in which matter moves itself? The "in the previous case," *ekei*, is rendered by both Apostle and Tredennick as "in the case of those things generated by art," but this makes little sense in that a thing generated by art is precisely not the kind of thing in which matter moves itself. In the previous paragraph, Aristotle indeed discusses how the seed acts just like things produced by *technē*, in that that from which the seed comes has "in a sense" (*pōs*) the same name (*homōnumon*) as the seed's product. Likewise, the bed is built from the *logos* or idea of the bed within the carpenter—the idea and the product have the same name. He adds that we must not, however, expect to find this homonymy in every case in nature, since we say that a woman—if not a monster (*eun mē pērōma ēi*)—is also produced by a man. Similarly, a mule does not come from a mule (1034a35–1034b4). In other words the processes of generation in nature, in *contradistinction* to those of art, are subject to certain deviations, and what is produced does not always have the same name as its progenitor—the mating of a horse and a donkey produces something else, called a mule.

It is these deviations, then, the articulating deviations of *automaton*, not the process of coming to be through *technē*, that are invoked in this passage as parallel to and illustrative of the chance self-motions of matter in spontaneous generation. The phenomenon of sexual difference is thus explicitly given the same aetiology, the same causal explanation, as that of spontaneous generation, and it is, in short, that "matter has the power to move itself in the same way as the seed." The self-motions of matter, its automatic spontaneity, are therefore able to intervene in and disrupt the passing down of the patronymic in reproduction, and

break the homonymy, force a shift in the *logos*, between one generation and the next. The *automaton* of matter thus articulates both beings and words through time, in a randomly shifting series, in a form of change and temporality characterized by unpredictability, lability, deviation, and opacity.

## V. (IM)POTENTIALITY AND SEXUAL DIFFERENCE

Further instances of the obscure powers of feminine matter in reproduction are found in *G.A.* when Aristotle asserts that if different species copulate and generate offspring, after successive generations the offspring will take after the female as regards their bodily form. Furthermore, when seeds are introduced into a foreign land, the plants will take after the soil (*kata tēn chōran*), which provides both the matter and the body for the seeds (738b28–36). In order to explain the heredity of characteristics through the maternal line, Aristotle must also posit the presence of multiple potencies, *dunamēis*, potential form, and active principles in the menstrual blood, once again blatantly at odds with his construal of the feminine contribution to reproduction as purely material and passive.

Since everything, when it departs from type [*existatai*], passes not into any chance thing but into its opposite, thus, in generation, that which does not get mastered must of necessity depart from type and become the opposite in respect of the power wherein the generative and motive agent has failed to gain the mastery [*ouk ektratēse*]. . . . Some of the movements are present in actuality, some in potentiality, those in actuality are those of the male parent and the general, such as those of the human being and animal, those present potentially are those of the female and the ancestors. Now, when it departs from type [*existamenon*], it transforms [*metaballei*] into its opposites. (768a2–6; 12–15)<sup>24</sup>

Here, the unpredictable, immanent proliferations of matter are understood as *dunamēis* which threaten the mastery, *kratos*, and actuality, *energeia*, of the masculine form, and which are capable of a violently destructive *existasthai* and *metaballei* that transform masculinity into its feminine opposite. This forceful *ek-stasis*, a derangement or departure from where something stands, a putting out of its place of the self-standing uprightness of masculinity, thus appears here as a violent and destructive unmanning resulting in a transformation, a symptomatic fall, into femininity. According to Aristotelian usage, *existasthai* signifies the possibility, the *dunamis*, that is in matter of being and not being, of a



thing's nature being destroyed, and in particular where it is turned into its opposite.<sup>25</sup> Further, the feminine *dunameis* are uncovered, revealed, through a privation of masculine *energeia*.

While the tracing of Aristotle's tropes of sexual difference along the lines of the *dunamis/energeia* distinction is an enormous and complex topic, it is worth noting in this context that although the female matter here is attributed with obscure powers, *dunameis*, that only come to light as a result of masculine failure, elsewhere, throughout *G.A.*, the male is said to possess *dunamis*, indeed the semen possesses "great potency" *megalēn echei dunamin* (726b12), and the female is, by contrast, characterized by a lack or inability, *adunamia*: "But the male and the female are distinguished by a certain ability [*dunamis*] and inability [*adunamia*]" (765b9). The ability and inability, *dunamis* and *adunamia*, are on the one hand the ability of the male to form a potent residue in the form of the sperm, capable of acting as a primary motive force either in itself or in another, and on the other the inability of the female to produce a residue with a comparable active power to act upon an other. This masculine potency, then, is an active, moving force, a *dunamis kata kinēsin*, producing effects in another. The female, in her ability to receive the semen, might be then said to possess passive *dunamis*, *dunamis tou pathēin*, but we do not find this formulation in the passage. Here, the female rather possesses a lack or privation of *dunamis*, a powerlessness or weakness: *adunamia*.

That the female is characterized both by the *dunameis* for body parts and formal characteristics inherent in the menstrual material, revealed only by the failure of masculine *energeia*, and by *adunamia* (signifying for Aristotle, as for us, masculine impotence: if we turn to the definition of *adunamia* in the philosophical dictionary of *Metaphysics* 5, we find the following clarification: "For we would not use the expression 'incapable of begetting' similarly for a child, a man, and a eunuch" [1979: 1019b18–19]), points to the fundamental, internal relationship between *dunamis* and *adunamia*, and the identification of feminine powers with masculine impotence and castration that lies at its heart.<sup>26</sup> While its movements and principles might not be knowable in a science, the *prōtē hulē* of feminine matter in Aristotelian reproduction thus appears to be a receptacle not only of the masculine principle of the sperm, but also of multiple ambiguous figures through which Aristotle attempts to account for its activities and contributions, the parts of the body including the female parts, all the maternal ancestors, not to mention the marvelous automatic puppets through which we are assured that

these mysterious processes can not only be known and understood, but perhaps also mastered and controlled.<sup>27</sup>

## VI. THE SEXUAL ARTICULATIONS OF AUTOMATON

The ambiguity of *automaton* as the unpredictability of feminine matter on the one hand, and as a figure for masculine technical mastery on the other is also deployed in Aristotle's attempt to explain the transmission of motion in the bodies of animals in *De Motu Animalium* (henceforth *De Motu*). In its relation to a given practical telos, desire, *orexis*, is said to transmit motion from the soul to the body as in a ball and socket joint, an image in which we are asked to imagine the soul as the trunk of the body, and the body as a limb set in motion. The part of desire that is the mover, the soul part, is at rest and sets the body part in motion in relation to its stasis. In this discussion we encounter an analogy with an artifact, in this case the wheel, which like the heavens turns around a fixed point, an unmoved axis which is separable from it by reason or thought, but not materially or spatially.<sup>28</sup> Aristotle, however, does not follow through on this suggestion, relying once again on the divine substance, *pneuma*, here specified as *sumphuton pneuma*, "connate," growing together or with, to ultimately provide an explanation of the body's ensoulment.

The artifactual analogy is developed even further in *De Motu* when Aristotle considers how the soul's proximate reason for desire, the object of desire, which appears through either sense-perception, *phantasia*, or thought, manifests in physical motion. Motion is said to result primarily from pursuit of the pleasurable or avoidance of the unpleasurable, although the presence of these things is clearly not required for motion to occur. The "form that is thought of," *to eidos to nooumenon*, happens to be like the actual thing—we for example "shudder and are frightened" just thinking of something cold or something scary (701b20–22). Through somatic reactions of cooling and heating in response to pain and pleasure, and the thoughts and *phantasiai* thereof (often so subtle we do not notice them), a small movement of enlargement or contraction takes place, and through a mechanism that is once again likened to the *automata*, a small motion in one part of the body can have greater consequences elsewhere, and will do so easily and simultaneously due to the actions of contiguous passive and active parts upon one another: "It is with good reason that the inner regions and those around the origins of the organic members are fashioned as they are, so as to change from solid to liquid and from liquid to solid, from soft to hard and vice

somehow wanting, fall short (*apolipēi*) in some way (702a14). Involuntary motions, embarrassing and inexplicable, especially the motions of the *aidōia*, the shameful parts, are glossed over in the ambiguity of *automaton*. The technical analogy once again allows for a clean and clear separation between activity and passivity in the transmission of motion, each in its place, and this clarity of separation is ultimately provided by the relation of the craftsman to his work: his activity is responsible for constructing the passive components of the *automaton*, and imbuing them with the mysterious illusion of self-motion.

## VII. THE AMBIGUITY OF AUTOMATON

Despite these proliferating examples of self-moving matter generated in the Aristotelian text, it is nonetheless axiomatic for Aristotle that matter can only be moved, and cannot be a source of motion itself. For example in *Gen. et Corr.* he states that “to be acted upon, that is, to be moved, is characteristic of matter, but to move, that is to act, is the function of another power” (335b29–31). A measure of just how thoroughly Aristotle seeks to render matter purely passive is shown by the very word he uses, *hulē*, which prior to his appropriation of the term to mean matter in a generalized sense, meant a forest, wood, or timber.<sup>30</sup> His frequent use of the example of the carpenter fashioning a bedstead from wood to illustrate coming-to-be cements the image of wood, not as living, growing nature, *phusis*, in coming to be, *genesis*, but as the passive dead material upon which the carpenter’s art, his *technē*, is exerted in *poiēsis*.<sup>31</sup> The constant reference made by Aristotle to this technical-productive power of the craftsman, to the active *dunamis* of the sperm that possesses the *archē kinēseōs*, the source or principle of motion, the “originating ordering” as Heidegger has it (1998: 189),<sup>32</sup> shows us that in the sublunary realm the source of motion, of self-motion and indeed all natural motions is marked as irreducibly masculine. In contrast with Aristotle’s oft-cited statement at the beginning of the *Physics* that technology imitates nature (194a21; 199a18),<sup>33</sup> the evidence here is rather the opposite. Aristotle’s use of technical analogies shows us that in a fundamental way natural processes are understood on the model of technological production. The figural deployment of *ta automata* therefore assimilates into *epistēmē*, *technē*, *logos*, and *telos*, the intolerable exteriority of *automaton* as chance.

The *automaton* as the automatic puppet is also a figure that signifies masculine autogenesis, the pure manifestation of *logos* through *technē* without the detour of bodily materiality: reproduction without women.

*versa*” (702a7–10). Motion is thus transmitted through the body on the model of *ta automata*, but unlike the puppets, a strange deliquescence and hardening takes place at the point of articulation, at the “origins of the organic members.” Not only are artifacts of masculine *technē* used to explain these articulations, but the bodily referent exemplary for motions responding to stimuli which include thoughts and *phantasiai* is apparently the male sexual organ in its capacity for erection and detumescence, *pace* Nussbaum’s commentary, which attributes these softening and hardenings to the areas around the joints (357).

The origin of voluntary motion (produced by both desire and thought) is given as the heart, for Aristotle the seat of the soul. In a further, vivid, analogy, Aristotle says that the *sumphuton pneuma* located here contracts and expands, and governs motion in all parts of the body, just like a “city well-governed by laws” (703a30). However, involuntary motions like those sometimes occurring in the heart and the penis are accounted for insofar as those parts are like “a separate living creature” (703b21–22).<sup>29</sup> He says we observe that these parts are sometimes moved “when something appears, but without the command of thought” (703b7–8), and sometimes not. The reason for the unpredictability of these kinds of motions in the male is given as the “passive matter” which is sometimes present in the right quantity and quality and sometimes not. Matter here once again exerts its ability to interrupt and disrupt teleological processes through its unpredictable presence or absence, but is once again disbarred from having any motions of its own. These errant disruptions in the *polis* of the body take place irrationally, unpredictably, and against *logos*, sometimes accompanying thoughts and sometimes not. The irony here, that the motions of the male organ are attributed to the unpredictable presence or absence of feminine matter, should not escape us. In this passage the feminine symptom thus haunts phallic masculinity in the most literal of ways. The tumescence of the penis depends upon the chance vicissitudes of matter—who can tell if it will be “present in the right quantity and quality”? Figuratively, too, we might say that the penis is thus beyond reach of the governance of the *polis*, subject instead to the wandering errancy of a “separate living creature” outside the city walls, in the countryside, the *chōra*.

Once again, in the motion of animals, teleologically organized forces confront obscure, organic, somatic, material processes, and are made explicit, illuminated, and rendered knowable by means of technical analogies, including the wonderful *automata*. Motion will be transmitted at once through these mechanisms, smoothly articulating active and passive components, unless these elements in the process are

attention to the figures generated at this boundary, fruit of the Freudian *eros* that binds and unites as well as the Heideggerian *logos* that is the laying that gathers, and noticing how within and through them masculine anxiety seeks to subsume and master the unruly feminine, we may perhaps also glimpse the persistence of something else. In substituting the teleological 'life' of masculine *technē* in the figure of *automaton*, and thereby articulating materiality as directionless repetition-compulsion, castration, blindness, *thanatos*, there is an inevitable crossing back, a chiasmus. *Automaton* may then return materiality to us with renewed wonder, figuring generativity, generating figures, labile and irreducibly pluripotentiate, articulating one moment, one name, one generation undecidably and unknowably to the next, generating accounts without end, as the condition of possibility of life.

## NOTES

For clarity and consistency, I have occasionally substituted my own translation for the translation consulted. I have also sometimes modified a given translation to highlight the presence or force of a particular word, often just reverting it to the Greek. I have marked these instances with the notation, "translation modified."

Earlier versions of this paper were presented at the meeting of the Ancient Philosophy Society at the University of Oregon in April 2005, and at the June 2005 conference of the International Association of Philosophy and Literature, University of Helsinki, and it has benefited greatly from feedback received on both occasions. Specifically, I would like to thank Sara Beardsworth, Sara Brill, Judith Butler, David Kazanjian, Sean Kirkland, David Farrell Krell, Christopher Long, Michael Naas, Johanna Oksala, and Eric Sanday for comments, conversations, and questions that have vastly enriched this paper. Its shortcomings, of course, remain my own. I would like to dedicate this paper to the memory of Jacques Derrida.

1. *Kai dei hupolambanetein hospes anapērian einai tēn thēlutēta phusikēn. Anapērian*, deformity, maimed, or incapacitated, is from the verb *pēroō*, to maim, mutilate, castrate. Indeed Aristotle uses the word frequently in the latter sense in *History of Animals*, e.g., at 10, 631b31.
2. An obvious example of such a scheme is that of Boethius (1969).
3. I cannot explicitly address the question of the legacy of the Aristotelian cosmos in late modernity here, but to assume that its hegemony has been simply overcome or superseded, without traces or hauntings, would be naive. That the metaphysics of presence haunts and informs the biology of sexual difference in contemporary scientific theory and practice is implicitly explored in Kraus's (2000) critical analysis of genetic research into sex difference using the fruit-fly *drosophila*.

That Aristotle installs this figure within the womb, at the somatic scene of sexual reproduction, is a measure of how thoroughly he seeks to render the vicissitudes of materiality in service to a knowable and calculable masculine teleology. We should recall that for Plato the womb wanders, and that same wandering (*planōmenon*) is attributed to the "errant cause" in the cosmogony of the *Timaeus*, the receptacle/*chōra*. The receptacle/*chōra*, chiasmatically positioned between the realms of Being and Becoming, is itself famously a site of multiple, indeterminate, feminine figurations. As figure for feminine generative materiality, unmasterable and beyond being, *automaton* may be read as a symptomatic persistence of choric errancy in the Aristotelian text, while simultaneously illustrating a masculine fantasy of technical mastery and full disclosure in and for a teleological cosmos, freedom from the opaque vicissitudes of materiality and femininity.

What, though, of the ambiguity of *automaton*? Is it simply resolved by the substitution of the *technē* and *logos* of *ta automata* for the *automaton* of *phusis* and *hulē*? Or does its choric persistence, its restless and uncanny symptomatocity, remain to haunt and trouble the Aristotelian cosmos, which despite its meticulously close attention to the multiplicity and complexity of phenomena, seeks to reduce all sources of motion to one in the figure of the Prime Mover? As noted by Freud in his famous essay on the uncanny, "waxwork figures, artificial dolls, and automata" are primary examples of the uncanny (1953: 378).<sup>34</sup> In the uncanny, the *Unheimliche*, there is an undecidability between life and death, there is a chilling encounter with something unfamiliar "which leads back to something long known to us, once very familiar"; *heimlich*, of the home and the (feminine) domestic sphere, but also with what is concealed from view, obscure (the ambivalence of this word which coincides with its opposite is itself *unheimlich*) (369–70, 377). Freud further quotes Schelling's formulation, "*Unheimlich* is the name of everything that ought to have remained . . . hidden and secret and has become visible" (375). This territory of the limit of the visible, the spacing or *chōra* in which masculine *theoria* encounters feminine materiality and perhaps should be struck by wonder, is that which Aristotle negotiates through the uncanny figure of the miraculous *automaton*, the marionette which, in the formulation of Hal Foster, "assumes our human vitality" while we "take on its deathly facticity" (1993: 129). What is revealed here that ought to remain repressed, concealed? Benjamin reminds us that "Exposure of the mechanistic aspects of the organism is a persistent tendency of the sadist. One can say that the sadist sets out to substitute for the human organism the image of machinery" (cited in Foster 1993: 115).<sup>35</sup> However, paying

4. See, for example, Plato's *Phaedo*, especially 78b–80e, where he discusses the likeness of soul to the unchanging forms, while the body is described as “unintelligible” and “dissoluble” (80b). Many will contend that this is a straw Plato, that numerous tendencies and examples in the Platonic corpus vitiate this characterization. However, as a legacy of Plato, manifest in Platonism and beyond, it cannot be ignored or wished away. By the same token, readings that downplay Aristotle's systematizing aspirations will fail to grasp their hierarchizing effects, especially, as I emphasize here, along gender lines.
5. For example, Lange (1983), Lloyd, (1984), Irigaray (1985), Butler (1993), and Freeland (1998). For a review of the legacy of Aristotle's theory of reproduction in the West, see Tuana (1988). Tress (1992) mounts an apology of Aristotle against his feminist detractors. Tress takes much of the textual evidence I produce here not to show fundamental and untenable inconsistencies within an overarchingly masculinist metaphysics, but instead argues that Aristotle places unusual and notable metaphysical weight on the material, passive, feminine principle, which then is seen to act in concert with the formal, active, masculine principle. Tress thus applauds Aristotle for upholding a regime in which women, though “valued,” are nonetheless necessarily and fundamentally secondary, a position which should be rejected on standard humanist, and not even radical feminist, grounds.
6. For a development of a notion of these groupings as “principle bundles” which operate similarly across many of Aristotle's texts see Green (1992).
7. “We think that we do not understand a thing until we have acquired the why of it (*to dia ti*)” (Aristotle 1969: 194b19–20).
8. The system that generates self-unraveling symptoms in the course of establishing its systematicity finds expression in the notion of autoimmunity advanced by Jacques Derrida in various contexts, notably that of terrorism and democracy in the wake of the events of September 11, 2001 (Derrida 2003).
9. The resonances, psychoanalytic and otherwise, of the coincidence as that which falls, especially in relation to the clinamen of Lucretius, are elaborated in Derrida (1984).
10. Illuminating instances appear both in the *Rhetoric* and *Politics*. At *Rhetoric* 1, 9 1367b25, in the context of assessing moral worthiness, he says that coincidences and strokes of luck (*kai ta sumptōmata kai ta apo tuchēs*) must be counted when assessing virtue because repeated acts of virtue, including those ones outside our control, show a man to be praiseworthy. This rather counterintuitive argument is further thrown into relief when it is compared with the previous point made, in which a quote from Simonides referring to Archedice, “Daughter, wife, and sister of tyrants” illustrates that virtue is more noble when it goes beyond what is expected: Archedice is *more* virtuous because she is the relative of tyrants and still not proud, according to the inscription on her tomb as given by Thucydides (1910). However, in the previous section, Aristotle has told us that “Virtues and

actions are nobler when they proceed from those who are naturally worthier, for instance, from a man rather than from a woman” (1367a17–18). According to these examples, then, a woman may be deemed worthy in that she exceeds the unchosen accidents of her birth, but never as worthy as a man, who may in turn be deemed such through unchosen coincidence or strokes of luck which demonstrate his worthiness, a situation that may itself be reasonably labeled symptomatic. In the *Politics* (1304a1), the *sumptōma* appears as an unspecified chance occurrence interpreted by a certain bridegroom as a bad omen when he came to fetch his bride. He went away without taking her, initiating a chain of events resulting in his death and extensive subsequent factionalism at Delphi. The entire passage concerns the marital and domestic roots of factionalism, where feminine symptoms in the *oikos* lead to widespread disruptions in the *polis*. A second usage of *sumptōma* in the *Politics* is unrelated to the theme of sexual difference, but is worth mentioning because of its quite extraordinary significance. The theme is the founding of Athenian democracy by Solon. Solon had constituted the jury-courts from all citizens, which finally led to a situation of rule by the people. At 1274a11 he states that this situation arose not at all by the intention of Solon, who bestowed minimal power on the people and appointed all the offices from the wealthy, but rather as a result of accident, *sumptōma*, a historical contingency in which the common people adopted leaders against the wishes of the respectable classes in a chain of events leading eventually to democratic government. The appearance of the *sumptōma* in this context of the birth of democracy can perhaps be read as another instance of non-sanctioned forms of agency disrupting hierarchy and teleology.

11. Plato's *Republic* 514b. The puppets are also mentioned in *Laws* at 644d, 645d, and 658b. In each case Plato uses *thaumata* to describe them, and not *automata*. For later ancient sources describing the puppets see Galen, *De Usu Partium*, 48, 262, and Heron of Alexandria, *Automatopoietica*. The use of *automatos* to describe spontaneous motions is already established in Hesiod and Homer. In *Works and Days* it is used to describe both diseases that of themselves (*automatoi*) come upon men as a result of Pandora's release of the god's gifts (Hesiod 1936: 102), and also the earth's bearing fruit, unforced (*automatē*), enjoyed by the golden race of mortal men living in the time of Cronos (118). There are three instances in the *Iliad*: first, when Agamemnon calls a counsel of elders, Menelaus comes unbidden (*automatos*), because he knows in his heart the concerns of his brother (2, 408); second, when Hera, furious with vengeance, lashes her horses and the gates of heaven open self-bidden (*automatoi*) (5, 748); and lastly, when Thetis visits Hephaestus, and finds him fashioning golden wheeled tripods, which might of themselves (*automatoi*) enter the gathering of the gods and return to his house (18, 376). The Hesiodic examples refer exclusively to the spontaneous motions of nature, while the Homeric refer rather to mysterious actions at a distance in the world of mortals and gods; the first two

Aristotle's hierarchy where formal and final cause are to be afforded greater import than material, but he fails to explore the consequence that material necessity itself is only disclosed as separate from hypothetical necessity, and appears thus as an ultimate cause, in cases where the two are in conflict.

17. Balme, defending Aristotle's teleology, says that it is only teleological explanation that provides the limits that make scientific explanation possible, the alternative being chaos: "the elements act in their own natural ways, but the actions are unlimited. This is the sense of the 'indeterminacy' (*aoristia*) that Aristotle attributes to proximate matter. It does not mean uncertain quality of action, nor an inscrutable intractability as some have suggested, but simply that the matter has not yet been formally determined into a precise state" (1987b: 283). Again, what I understand as the fundamentally conflictual, agonic nature of the relationship between material necessity and teleology for Aristotle is not addressed.

18. My translation.
19. For an extended discussion of the consequences of the analogy of the automatic puppets with spontaneous generation, see Lennox (1982). While Lennox discusses the substantially the same material and similar issues in Aristotle as I do here, his methodological approach and guiding questions are so different from the present ones that to substantively engage with his reading would unfortunately take me far beyond the scope of this paper.
20. The metaphors of nature as craftsman are noted by Freeland (1994: 155–6), although she does not see in them grounds for a specifically feminist critique of Aristotle.
21. Balme argues that the analogy with the automata reveals that this "complex of movements can control and direct itself" (1987a: 18). The analogy with the house and house building, however, reveals the source of this control and direction more precisely as the form and the final cause.
22. The feminine valence of this class of creatures is made manifest by Simone de Beauvoir, when she writes in *The Second Sex*, "Feminine sex desire is the soft throbbing of a mollusk" (de Beauvoir 1989: 386). The analogy with the situation of spontaneous generation as described by Aristotle is further confirmed when de Beauvoir writes of the feminine sex organ that it is "concealed, mucous, and humid" and that feminine sexuality is like "the carnivorous plant, the bog. . . . She is absorption, suction, humus, pitch and glue, a passive influx, insinuating and viscous" (ibid.). De Beauvoir's horrifying description of the feminine sexual condition can be read as a diagnosis of a sexual imaginary which has its foundations in the very architecture of sexual difference as constructed by Aristotle.
23. Translation modified, my emphasis.
24. My translation.
25. The force of *existasthai* as that which simultaneously diverts and destroys may be demonstrated by Aristotle's usage in some other passages: in the *Nicomachean Ethics* he writes, "Pain may drive a man distracted and destroy

- apparently incited by the strength of emotion, one of a man upon another man with whom he shares a bond of kinship, the other of a goddess upon a divine artifact. The last example, the self-moving tripods of Hephaestus, inaugurates the "automaton" as the product of the craftsman, who creates "a wonder to behold" (377). I thank Michael Naas for the references to Homer.
12. Freud (1953) cites the automaton as one of the principal examples of the uncanny, in which the distinction between the animate and the inanimate is undecidable and the specters of repetition-compulsion, blindness, castration, and death are raised. Lacan puts *automaton* and *tuché* to work to articulate a distinction between the network of linguistic signifiers in which return and repetition is guaranteed, and the "encounter with the real" beyond the automatism of repetition (1981: 52–3), though there are no grounds for this distinction in the Aristotelian usage of these terms, and in fact *automaton* may be seen itself to harbor the ambivalence to which Lacan points. Along with Page duBois, I agree that psychoanalytic interpretations of Greek and ancient cultures often rest on an assumption of the universal applicability of psychoanalytic categories and therefore participate in a kind of circularity which seeks to unproblematically guarantee that universality, while in fact enacting colonizing and appropriative gestures. However, as she also states, "Psychoanalysis supports, is produced by, and is compatible with metaphysical, hierarchical, Western thought; it is the heir of Aristotelianism, of the logic of the great chain of being in which God emanates forth a series of beings arranged on a ladder of diminishing value and quality, from god to philosopher to master to husband to wife to slave to animal down through the oysters" (duBois 1988: 16). If we accept that psychoanalysis is indeed an heir to Aristotelianism, then mining psychoanalysis for its capacity to diagnose and unsettle the foundations of the very metaphysical tradition which conditioned its possibility is not just to impose an alien theoretical framework upon a set of culturally and historically removed object texts, but also sets in motion an immanent critique, reading differently situated texts from the same tradition against one another in new ways, and in so doing, it is hoped, exposing the assumptions and limitations of both discourses and the tradition in which they participate, while offering new openings and possibilities for thinking through and beyond that tradition.
  13. Foster's discussion of automatons in high capitalism and their critique in surrealism is both utterly anachronistic to this discussion, and yet uncannily germane.
  14. I use Tredennick's translation unless otherwise indicated.
  15. Unless otherwise noted, the translation used is Apostle's.
  16. Also see Cooper (1987), who defends the position that hypothetical necessity is different from material necessity, but appears alongside it, the latter being subsumed to but not reduced to the former. Cooper argues that material necessity is a proximate cause but not an ultimate cause, thus reiterating

27. Lesley Dean-Jones (2000) argues that understanding Aristotle's theory of reproduction in terms of the Timaeon reproductive scene of demiurge, receptacle, and their offspring—the world of becoming, solves various difficulties Aristotle encounters in terms of accounting for transmission of maternal qualities in the offspring. I do not believe she succeeds in providing a solution for these difficulties since the receptacle is not a being, has no qualities, predicates of its "own" that could be transmitted on to an offspring. However, as I discuss elsewhere (Bianchi 2004), there are good grounds for understanding the errant feminine motions of the Platonic receptacle and *chōra* as persisting and returning symptomatically throughout Aristotle's account of generation.

28. "But they are not right to ascribe power to the poles, which have no size and are termini and points. For besides the fact that nothing of this kind has any substance, it is impossible for a simple motion to be imparted by what is two; and they make the poles two." (Aristotle 1978: 699a20–24). Cf. *Physics*, 8, 10 267b7–9: "Now this [the mover] is either in the middle or at the circumference [of the sphere], for these are the principles [of the sphere]. But things whose motions are fastest are nearest the mover, and such [i.e., fastest] is the motion of the circumference; so the mover is there" (Apostle's clarifications).

29. He writes further, "In the case of the heart, the reason for this is clear: in it are the origins of the senses. And there is evidence that the generative part, too, is of this kind: for the force (*dynamis*) of the semen comes forth from it like a kind of living creature" (703b23–26). The automatism of the heart, and its paradoxical exteriority, has been thematized by Derrida (1991: 231), and elaborated by Royle (2003), who writes, "One's heart, even or especially when learning by heart, is never one's own. At the heart of desire, of the desire to write, of the desire to remember and of the desire to appropriate, to have as one's own, to have as one's own thing, is the otherness of a foreign body, a mechanical and deadly power of repetition" (Royle 2003: 193).

30. Heidegger makes the point in his *Phusis* essay thus: "*Hülē* in the ordinary sense means 'forest,' 'thicket,' the 'woods' in which the hunter hunts. But it likewise means the woods that yield wood as construction material. From this *hülē* comes to mean material for any and every kind of building and 'production'" (Heidegger 1998: 209–10).

31. As Tuana puts it, "Far from the fertile, flowering, burgeoning earth, the female principle is seen as inert wood. The matter of woman is not the living, nourishing soil, but the severed, lifeless limb of a tree—that which although was once living is now dead" (Tuana 1994: 194).

32. In a passage that strikingly emphasizes the dominative, paternal hue of *archē* Heidegger writes that, "On the one hand *archē* means that from which something has its origin and beginning; on the other hand it means that which, as this origin and beginning, likewise keeps rein over, i.e., restrains

his nature" (*lupē existēsi kai phtheirei tēn phusin*) (1119a23); in making the argument in *Gen. et Corr.* 1, 7 that agent and patient must be alike in genus but not in species: "For whiteness could not be affected in any degree by line, or line by whiteness, except perhaps incidentally. . . . [F]or unless the two things are contraries or made up of contraries, one cannot displace the other from its natural condition" (*ouk existēsi gar allēla tēs phuseōs*) (323b28); and in describing different kinds of change in the *Physics*: "A thing in motion departs least from its substance if it is in locomotion rather than in any other [kind of] motion" (*dioti hēkista tēs ousias existatai to kinoumenon tōn kinēseōn en tōi pheresthai*) (261a20). Lastly, in a discussion in *G.A.* of how the spermatic residue is formed, he says, "whereas everything that undergoes colliquescence (melting together) gets destroyed and departs from its proper nature" (*sumēkōmenon de phtheiretai pan kai existatai tēs phuseōs*) (725a29).

It is also impossible to ignore in this context Heidegger's designation in *Being and Time* of the "*ekstatisch* pure and simple" as temporality (Heidegger 1962: 377). That which stands outside, outside of itself, gives for Heidegger the primordial character of temporality, whether in past, present, or future, and primarily shows itself in the existential projecting into the future. As the translator's note points out, "The root-meaning of the word 'ecstasis' (Greek *ekstasis*; German 'Ekstase') is 'standing outside.' Used generally in Greek for the 'removal' or 'displacement' of something, it came to be applied to states-of-mind which we would now call 'ecstatic.' Heidegger usually keeps the basic root-meaning in mind, but he also is keenly aware of its close connection with the root-meaning of the word 'existence'" (ibid., n. 2). In this Aristotelian context, *existēmi* seems not to carry the meaning so much of standing outside itself, as being ousted from standing. That which *existatai* does not stand outside itself, manfully project itself into the future, but its character as standing is destroyed *as such* as it is pushed from its rightful place and feminized. While there is a suggestive connection here between privation, feminization, and the temporal dimension of *ekstasis*, I am unable to explore this further here.

26. As Walter Brogan writes of Heidegger's understanding of the privative nature of *dynamis* in Aristotle, "What awakens us to *dynamis* is the *not coming through*, the not-being-able" (Brogan 2000: 118), while Giorgio Agamben reminds us in his essay on potentiality in Aristotle that "Every human power is *adynamia*, impotentiality; every human potentiality is in relation to its own privation" (Agamben 1999: 182). Agamben goes on to argue that human freedom itself consists in being "*capable of one's own impotentiality*, to be in relation to one's own privation" (ibid., 183). Agamben's call for acceding to one's own impotentiality and one's own privation, as well as for a "potentiality that conserves itself and saves itself in actuality" (ibid., 184), his call to understand freedom as radical passivity or receptivity, may, according to the analysis offered here, be productively re-read as a call for a non-anxious relation to masculinity.

- and therefore dominates, something else that emerges from it. *Arché* means, at one and the same time, beginning and control" (Heidegger 1998: 189). See also Schummer (2001).
34. I thank David Farrell Krell for alerting me to the connection with the Freudian uncanny.
35. Donna Haraway's "A Manifesto for Cyborgs" (1991) offers a recent mythology of an intimacy between organism and machine, *phusis* and *technē*, which argues that the pleasure and responsibility given by such boundary-confusion make it a powerful anti-foundationalist locus for the contemporary feminist political imagination. Aristotelian *automaton* shares in the cyborg's ambiguity, its capacity for monstrosity, in the anomalies of regeneration rather than the guarantees of sexual reproduction on the one hand or the triumphs of technological production on the other. While I have in the present analysis relied on traditional structural equivalences between male and female, *phusis* and *technē*, in order to disclose the stakes of Aristotle's construction of *automaton*, the terror of the uncanny automaton may nonetheless be reconceived or transvalued as the liberatory delirium of the plural and partial cyborg.

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