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"Man is the Measure": Forster's Evolutionary Conundrum

> All the old literature, with its praise of Nature, and its fear of Nature, rang false as the prattle of a child.
>
> —E. M. Forster

1.1 The Conundrum

E.M. Forster's short story "The Machine Stops," first published in 1909, is a dystopian vision with an implicit call to remember the powers of nature, take in the full scope of the environment, and reject social systems that do not adapt to ecological changes. Like many works in its genre, it tacitly defines what it means to be human by depicting an anti-human way of life (Cooke). Forster's vision is a culture-specific expression of anxiety before a society increasingly dependent on machines — a response to rapid industrialization and the technological optimism of futuristic utopians like H.G. Wells. In a wider view, the story celebrates normative human universals: parental investment and attachment, pair bonding, communal gatherings, adherence to small social circles, physical contact, interpretation of facial expressions and vocal tone, physical prowess and a delight in dynamic, cognitive play (Boyd 434–46; Brown; Cooke; Dissanayake).

Commentators on Forster have tended to focus on his humanitarian ideals, either to extol them or to demonstrate their inherent instability (Crews, Armstrong). For most traditional humanists until the late twentieth century, Forster's personality and its development through his life were the major points of approach for understanding his literary substance and style (Stone, Trilling, Colmer). More recently, critics have put postmodern cultural theories to work on Forster's suppressed homosexuality, his politics, his relationship to the British empire and his conflicted depiction of women (Goldman, Markley, Miracky, Lane). These aspectual explorations have sought little common ground. Indeed, some postmodernists have viewed their own interpretive heterogeneity "as a sign, critically speaking, of [Forster's] finally coming of age" (Bradshaw 5). Despite this heterogeneity, the postmodernists have something important in common both with each other and with the traditional

humanists: an appeal to cultural factors in Forster's life, such as his relation to modernism and industrialism, his peripheral role in the Bloomsbury group or his preoccupation with Hellenism and Oriental mysticism (Ardis, Head, Medalie, Peppis). Such categories have formed the lowest common denominator for his oeuvre. Many valuable observations have been made in this way. Critics have charted Forster's main cultural influences, stylistic devices and themes. They have noted his predilection for antitheses and his oft–portrayed meeting between stagnated intellectualism and mystified nature (Crews; Bradshaw 4; Peppis 60). But they have not accessed the biological level underneath the cultural factors, neither for explanation nor to take its necessary constraints into account. Accessing that level could give us a better view of Forster's particularities, provide explanation in place of metaphorical reduction, and restrain some of the more misleading speculations or disagreements about Forster's meanings.

"The Machine Stops" can serve as a test case for the utility of accessing a biological level in Forster's system of meanings. Dominic Head rightly observes that Forster's short stories are "commonly held to be insubstantial" (Head 77). "The Machine Stops" would be unfairly included in that judgment. It contains the chief elements in Forster's symbolic universe and reaches the full scope of his imaginative depiction of stagnated social contexts versus unruly nature. Thus, it can reveal the bare essentials of his image of humanity.

Forster depicts corrupted behavior involving universal human concerns in order to create aversion in his readers. Taking that aim as a starting point, we can go beyond his narrator's ostensible concern with machines and gain insight into a deeper concern with what makes human life worth living. "The Machine Stops" celebrates precisely the adaptation that it seems to be disclaiming against. Contrary to the narrator's belief, the Machine people are destroyed not by the fact of adaptation, but by their ultimately maladaptive adaptation to a narrow and unreliable niche. The Machine society fails to move outside that niche to cope with a changing environment: in other words, they fail to adapt. Though Forster draws one conclusion from their mistake, he stops short of the full implications of his own vision. Adopting a wider evolutionary perspective, we can correct and extend the lesson he intended us to learn. He is right: the destruction of the Machine society offers a lesson in the dangers of ignoring human nature and becoming subservient to one's tools. But it also does more than that: it offers a lesson in the necessity of adapting to and being aware of the larger environment.

1.2 The Story

"The Machine Stops" depicts a society familiar to dystopia genre connoisseurs: its human beings dwell under the surface of a supposedly barren earth, their lives ruled by a world-encompassing master machine. They lead a monotonous existence with all the means of biological life available at a button's pressing, cooped up in individual cells while they communicate with each other through the Machine. The narrative recounts the troubled experience of one such troglodyte, Vashti, whose rebellious son Kuno convinces her to travel across the world in an "air-ship" so that they can engage in the anachronistic custom of meeting in person. He tells her that he went to the surface of the earth to encounter an environment beyond the knowledge of their society. Rather than recognizing the limitations in her society's knowledge, Vashti condemns his behavior as "unmechanical" and returns to her own cell. As time passes and Vashti processes the frightening "direct experience" of the air-ship ride, the Machine society makes two big changes: access to the surface of the earth is no longer allowed, and the way of the Machine becomes an official religion. Vashti gets a cryptic message from Kuno saying that the Machine is about to stop, and living conditions start to decline shortly afterwards. Music jars, air becomes polluted and beds stop appearing. The people of the Machine society go from apathy to despair too slowly to save themselves. As the narrative draws to an end, the Machine does stop and the troglodytes are left dying in their burrows. The final image is of the dying Vashti and Kuno embracing in the chaos: touching, crying, and reassuring themselves with the thought that Kuno saw human beings still living on the surface.

2. The Anti-human and Human in Character

Brett Cooke observes that "social engineers [in the great dystopias] tinker with traditional modes of sexual reproduction, the rearing of children, and other vital elements of daily life, creating a world . . . unfit for human habitation." Such "mishandling of core human concerns" causes the strong aversive effect of the narratives (Cooke 381). Though "The Machine Stops" predates most of Cooke's examples, it employs the technique identified by him. Forster was by his own admission responding to the optimistic future visions of H.G. Wells (Stone and Forster 66). The dystopia he builds nonetheless has much in common with those constructed by Zamyatin, Orwell, Huxley and Bradbury in response to different provocations. In all these dystopias, human beings are isolated and deprived of their privacy at the same time. They conceive their children by government orders and rear them in public nurseries without parental investment. ("'Parents, duties of,' said the book of the Machine, 'cease at the moment of birth. P.422327483.'"

Forster 123). Their lives are standardized, monotonous and immobile. ("Men seldom moved their bodies; all unrest was concentrated in the soul." Forster 124). They have no real tasks, creative pastimes or goals (beyond "eating, or sleeping, or producing ideas" Forster 125). They have no strong bonds with other people, they never touch, and they have no direct experience of the world outside their cells. Forster enhances the unpleasantness of this lifestyle by having his main characters be at odds with it: Kuno overtly, his mother covertly.

The Machine people communicate constantly, but information is neither structured by emotional importance nor intense enough to convey full meaning. For most of her waking time, Vashti is in contact with vast numbers of people. She gives electronic lectures from her cell — where people "[hear] her, fairly well, and [see] her, fairly well" — since "public gatherings [have] been long since abandoned." (120) But how well is "fairly well"? Consider for instance Vashti's response to a message by Kuno:

> He broke off, and she fancied that he looked sad. She could not be sure, for the Machine did not transmit nuances of expression. It only gave a general idea of people — an idea that was good enough for all practical purposes, Vashti thought. (118)

Vashti supposes that the "general idea of people" she gets through the Machine is adequate for all practical purposes (118). She fails to recognize that human meaning and value are also "practical." Her own son is speaking to her, and she cannot tell if he is sad or not. Because communicating and the gauging other people's states of mind is crucial to navigating a social context, humans in all cultures are preoccupied with detailed facial expressions (Bordwell; Brown; Dissanayake). Moreover, Vashti's own "fancy" that Kuno is sad contradicts her: if the general idea is enough, why does she spontaneously register the possibility of specific ideas?

Vashti has rebellious impulses that she has not reconciled with her conscious beliefs. She feels an attachment to Kuno: "there was something special about Kuno . . . there had been something special about all her children." (123) She has a need for sympathy, and she is vaguely dissatisfied with ideas removed from the direct experience of the world outside her cell. She is indignant about injustices done to her: "Some cabins were better than others . . . she did not get the best . . . the attendant had been unfair, and spasms of rage shook her." (125) Despite these emotional stirrings, she cannot connect her dissatisfaction with the wider conditions of her life or even register it properly as dissatisfaction. To her, suicide — either her own or that of her electronic friends — is a concept too common to merit critical reflection: "After an unsuccessful lecture, she would sometimes ask for Euthanasia herself." (149)

In contrast to his mother, Kuno protests openly against the way of the Machine. His rebellion is at the core of the narrative. His is the voice that judges Vashti's lifestyle for both her and the reader. When she exclaims, "I dislike seeing the horrible brown earth, and the sea, and the stars when it is dark. I get no ideas in an air-ship," Kuno at once defends direct experience of the natural world: "I do not get them anywhere else." (117) His dictum "Man is the measure" (134) implies Forster's aversion to a society turned away from core human concerns to be strangled by the mechanical garment it has woven:

> Truly the garment had seemed heavenly at first, shot with colours of culture, sewn with the threads of self-denial. And heavenly it had been so long as it was a garment and no more, so long as man could shed it at will and live by the essence that is his soul, and the essence, equally divine, that is his body. (157)

Though he serves as Forster's voice, Kuno is also a citizen of the Machine society. He is himself being strangled by its garment, and his "ideas," even though they derive from direct experience of the wider natural world, are constrained by the limitations in that experience. His rebellion — slow, small-scale and ultimately failed — is more pathetically than epically heroic. Even though he longs for the human "essence" that the Machine corrupts, Vashti is the only person he can think to include in his rebellion. She makes for a poor ally — it is not until they are dying that she realizes "what had been important on the earth" (156).

Kuno is significant not because he leads a successful revolt — he does not — but because he functions for Forster as an intuitive channel between the Machine society and ancestral humanity. The "spirits of the dead" comfort him while his attempted Kuno himself does not understand this feeling of comfort in a hopeless struggle ("I don't know what I mean by that. I just say what I felt." 136), but it is the supreme illustration of human nature crying out against a lifestyle that constrains it. As Kuno climbs toward the surface of the earth, he is climbing away from Forster's conception of an anti-human society, compelled by the voices of his feelings. He instinctively seeks a future that will satisfy the universal human need for movement and touch and social bonding. He realizes enough of all this to explain the Machine's anti-human faults to Vashti:

> We created the Machine, to do our will, but we cannot make it do our will now. It has robbed us of the sense of space and of the sense of touch, it has blurred every human relation and narrowed down love to a carnal act, it has paralysed our bodies and our wills, and now it compels us to worship it. (140–41)

3. Tonal Structure and Pattern Play

Forster's dystopian vision is a grim parody — even, some might say, an exaggerated warning against an impossible state: a straw man society. But is our aversion so obviously justified? This society has eliminated hunger and thirst and war and achieved material equality; it allows its population to spend their days immersed in culture and intellectual discourse. Surely, some of us would enjoy Vashti's general existence as it is described: "She exchanged ideas with her innumerable friends and believed she was growing more spiritual" (149). She has most material conveniences she wants — hot baths, cold baths, food, drink, clothes, medicine, music and literature — at a button's pressing. Yet, unlike the Eloi of *The Time Machine*, the Machine people are introduced in a way that makes it hard to see anything utopian about their lifestyle. Forster's systematic repression of normative human universals clues us in to the dystopian perspective. The structure of the narrative offers a corroborating clue.

"The Machine Stops" establishes its dominant tonality very quickly. At the beginning, the narrator asks us to imagine a small, windowless hexagonal cell: "like the cell of a bee" (115). The cell is empty save for a desk, an armchair and the "swaddled lump of flesh" that is Vashti (115). There is light, fresh air and music, but they are emphatically unnatural: "It is lighted neither by window nor by lamp, yet it is filled with a soft radiance. There are no apertures for ventilation, yet the air is fresh. There are no musical instruments, and yet . . . this room is throbbing with melodious sounds" (115). The colors are cold and few: Vashti's "white as a fungus" face, the "faint blue light" of her video communicator and its "darkening to purple" before it shows the image of Kuno (115). Descriptions are simple and economically applied.

During their first conversation in the narrative, Vashti reveals to Kuno that she loathes stars, and Kuno responds that he longs for them. He wants to "see them not from the air-ship, but from the surface of the earth, as our ancestors did." (118) The static sterility of the Machine cell is thus contrasted with a complex, dynamic natural image. Readers are teased with the alluring image only to have it rejected by Vashti in favour of the static sterility. Kuno's appeal to "ancestors" emphasizes the connection between humanity and the rejected image, and Vashti's and Kuno's contrasting attitudes serve both to establish character and to direct the reader's perspective. Static environments universally produce boredom in real life, and so they do when depicted in literature. From a very early age, human beings are fascinated by dynamic patterns, and that fascination is encouraged and shared by their caregivers (Dissanayake). Even without directly expressing his authorial

judgment on this scene, Forster can be confident that most readers will be repelled and alienated by a society that is not interested in stars. At this point, so early in the narrative, we are already unmistakably within the boundaries of a dystopia.

The image of the stars reappears as an even more apparent symbol of dynamic intricacy in the next phase of the narrative, when Vashti is on board the "air-ship":

> . . . and only the stars distracted her. They were not motionless, but swayed to and fro above her head, thronging out of one sky-light into another, as if the universe and not the air-ship was careening. And, as often happens on clear nights, they seemed now to be in perspective, now on a plane; now piled tier beyond tier into the infinite heavens, now concealing infinity, a roof limiting for ever the visions of men. In either case they seemed intolerable. (126)

Vashti experiences similar perceptual overload in other contexts. She cannot stand the smell, sight or sound of new things. She is afraid to leave her cell, and afraid of hearing or seeing people in reality; she recoils violently from touch. But her reaction to the stars is particularly important, because dynamic patterns are at the heart of Forster's "direct experience." The night sky is described as rhythmic, full of motion but of a semi-predictable nature, with repetitions that prevent chaos (to and fro, out and in etc.). It is universally, primally fascinating (Dissanayake 146–48). Current scholars of art and developmental psychology hypothesize that shared cognitive play with aesthetically and emotionally modulated patterns, starting with baby talk, is both crucial to human development and closely related to art (Boyd; Dissanayake; Easterlin). Forster intuitively uses the stars as an archetypal image of this rhythmic play, connects it with existential themes ("concealing infinity . . . limiting for ever the visions of men" 126) — then has the representative of the Machine people reject it. That rejection makes Vashti and her society look anti-poetic, anti-philosophical and anti-human. It also makes most readers disinclined to return to the sterile air-ship, in company with an unsympathetic character, as the skylights close. Forster is deftly cultivating the reader's disgust. The only positive motive for continuing to explore this alien world is the desire to find out what Kuno wants to tell Vashti.

Kuno's story produces jolting tonal breaks in the overarching narrative flow. As Vashti arrives, the narrator does his best to elicit the reader's sense of futility: "She might well declare that the visit was superfluous. The buttons, the knobs, the reading-desk with the Book, the temperature, the atmosphere, the illumination — all were exactly the same" (131). We are arriving at a new place, after an arduous journey, to find the exact same environment that has been left behind. Without a feeling of space and progress, Vashti's quest becomes the essence of narrative frustration. At this point, Kuno reveals that he is being threatened with a death penalty. He injects the narrative with a feeling of urgency and change. In contrast to the futility and

stagnation of Vashti's world, the story Kuno tells to explain his death penalty is dynamic and progressive. It features several different milieus; it contains danger; and it is reflected within a human mind moved by recognizably human motives. Kuno describes the process of recovering his "sense of space," walking up and down the sterile corridors to become stronger; he expresses his yearning to reach the surface of the earth. Recounting his discovery of an old ventilation shaft, he paints a very simple picture of what his rebellion is for:

> I seemed to hear the spirits of those dead workmen who had returned each evening to the starlight and to their wives, and all the generations who had lived in the open air called back to me, "You will do it yet, you are coming." (135)

Starlight, loved ones, and open space — or in the terms of evolutionary psychology: stimulating natural patterns, conspecific sexual/emotional bonding, and unrestrained locomotion. These elemental human needs are what "all the generations" call to Kuno with. Even Vashti is moved by his "absurd" behaviour at this point, remembering that he has "lately asked to be a father, and his request [has] been refused by the Committee" (135). Kuno is a tragic hero contrasting Vashti's stubborn adherence to the status quo. His humanity, just glimpsed in the ventilation shaft, seems to crumple under the weight of the Machine society.

When Kuno finally reaches the surface, he encounters mystified nature: the misty hills of Wessex surrounded by a vast sky to offset the claustrophobic Machine cells. But before long, "the peace, the nonchalance, the sense of space" are violently disturbed as the Machine sends its tentacled "Mending Apparatus" to retrieve the rebel, stripping life from the little "living" hills as it tears him back down (138–43). Just as Vashti's air-ship journey took her to the same unchanging, standardized belly of the Machine from which she had set out, Kuno ends up in his cell again "surrounded by artificial air, artificial light, artificial peace" (143).

From this point on, the practical issue of the plot — whether the Machine will be destroyed — is marginal to the main interest of the story. Forster has already shown the full ugliness of the Machine society: a nightmarishly static life that makes human beings recoil from everything human. He has shown how the Machine resists progress and new discoveries, like the inhabitable surface. A combination of explicitly repressed human universals and deftly applied tonal patterns works on our evolved dispositions to make us *feel* that the Machine is wrong (Cooke 388). The narrative's second climax, when the society collapses around Vashti and Kuno, only brings that feeling to its necessary conclusion: the inflexible must break because everything in the narrative structure had been preparing for it to happen.

4. ". . . glozing it over with talk of evolution . . . "

Before closing his meditation on the Machine society, Forster's narrator gives a eulogy for Vashti and Kuno. In their final moments they gain insight into the intentional meaning of the narrative they inhabit, and weep for humanity. It is during this eulogy that the narrator gives full expression to a theme that has been appearing in glimpses throughout "The Machine Stops":

> The sin against the body — it was for that they wept in chief; the centuries of wrong against the muscles and the nerves, and those five portals by which we can alone apprehend — glozing it over with talk of evolution, until the body was white pap, the home of ideas as colourless, last sloshy stirrings of a spirit that had grasped the stars. (157)

The Machine people have weakened their bodies and forsaken direct experience of everything outside their cells. Training his body in order to climb up the ventilation shaft, the unusually strong Kuno prides himself that he can "hold the pillow of [his] bed outstretched for many minutes" (136). He and his fellow citizens have become too dependent on their tools — become "strangled in the garment that they have woven." They have forgotten that man is the measure — his "feet are the measure for distance, his hands are the measure for ownership" (134).

Are these warnings meant to suggest that tools and technology are an environmental trap? Human beings have depended on tools, not just for aid but for survival, significantly longer than Forster's fictional "centuries of wrong." We have used technology that reaches beyond the inventiveness of one generation (and the measures of its individuals) at least since we learned to control fire (Hill, Barton, and Hurtado). Indeed, Robinson Crusoe — the archetypal fictional Man as Measure — not only made tools but fetched those he couldn't make from the remains of his shipwreck, and used those to make others. Whatever Forster's narrator thinks, we cannot "shed [our tools and technology] at will and live by the essence that is [our] soul, and the essence, equally divine, that is [our] body" (157).

So is the warning of "The Machine Stops" wrong? Not necessarily, but it has a misplaced focus. The Machine people differ from all other peoples in one crucial respect: they have adapted further to their tools than they have adapted their tools to their environment. They treat the Machine as if it were an environment in itself, disregarding the fact that it is part of a much bigger, changing system. The "universal establishment of the Machine" (122) is an obvious lie: the one fateful, fatal lie of the Machine society. In everything from the flank of Vashti's air-ship, "stained with exposure to the outer air" (125), to Kuno's surface experience, it is apparent that the Machine resides *within* an environment. Though Forster is vague on the technical details, the final scenes reveal that the Machine itself is vulnerable. Any adaptive

niche naturally has its risks, but the crucial weaknesses of the Machine is that it is inflexible, it absolutely shuts out the rest of the environment and it thus eliminates even the possibility of an adaptive response to the environment. Because it has sealed itself off from the larger environment, the inhabitants of the Machine will find it difficult or impossible to expand into other niches — as seen in the outcome of Kuno's rebellion. The Machine is a sinking ship, rejecting the concept of the ocean, locking those who depend on it below deck. It has tried to step outside of evolution and is ultimately likely to be destroyed by evolution. Forster does very well to warn us against adapting to such an environment.

It is clear that the Machine society's structure has become more concerned with perpetuating the Machine than with safeguarding the human beings who reside within it. In one of Kuno's most burning jeremiads to Vashti, he exclaims:

> Cannot you see, cannot all you lecturers see, that it is we that are dying, and that down here the only thing that really lives is the Machine? . . . The Machine proceeds — but not to our goal. We only exist as the blood corpuscles that course through its arteries, and if it could work without us, it would let us die. (140–41)

Human beings, he implies, have evolved into something like parasitic organisms. Indeed, they are not even organisms, but blood corpuscles. The Machine's inability to deal with the outside world is even more worrying in this metaphor: our species has become dependent on (indeed, part of) a maladaptive organism. Kuno's image captures both the idea that the Machine people are irreversibly assimilated into the Machine ("blood corpuscles") and the idea that the Machine is indifferent to its inhabitants ("it would let us die").

Kuno's image of the blood corpuscles also reinforces the idea that the Machine people experience the world only through the Machine: that they lack "direct experience." This loss of wider direct experience ("centuries of wrong against . . . those five portals by which we can alone apprehend") has previously been linked to physical degeneration, and to evolution ("glozing it over with talk of evolution, until the body was white pap").

Forster associates the evolution of man with his negative view of technological progress and adds his aversion for empty theoretical ideas ("colourless, last sloshy stirrings"). His dystopian vision illustrates *maladaptive technological progress*. However, through his conceptual associations and contrasts, Forster ends up opposing the "essence" of man to adaptation in general. The inhabitants of the Machine society fail to perceive and respond to the wider environment: that is, they fail to adapt successfully. Yet, Forster presents adaptation and the disappearance of direct experience as connected sins of the Machine society. The Machine lifestyle is an

adaptation, but it is an adaptation that precludes further possibilities of adapting: a narrow niche specialization that fails to respond to changing conditions within or without the niche. It is thus ultimately maladaptive. The Machine lifestyle is not a prime example of adaptation, but an evolutionary cul-de-sac.

In Forster's depiction of adaptation, the Machine people resemble moles or cave dwelling fish losing the keenness of the senses that do not help them navigate their habitat. But his understanding of evolution, like the niche specialization of an extinct species, is too narrow and inflexible. Despite the narrator's implications, the Machine people's adaptation differ from that of moles in a number of ways. They are not gradually losing one superfluous perceptual organ, but rather suppressing the overall ability to process perceptual information. For any organism in any environment, that is maladaptive. Though enforcing maladaptive behaviour, the adaptation has not yet gone very far. Kuno is curious, takes in different environments and is fascinated by the patterns of the stars. Even if the Machine people's bodies have degenerated rapidly from disuse, Kuno can build up muscle enough to be able to reach the surface in a relatively short time. The Machine people have difficulty breathing outside the Machine, but some of the ostracized people survive on the surface. Through Kuno's rebellion and Vashti's human impulses, we see that the Machine people are still mostly like us. The concern that Vashti and the other lecturers show with prohibiting direct experience of the natural world indicates that cultural forces are still necessary to enforce the nascent adaptations to the Machine niche. The Machine is "biocultural," like all human contrivances, but the proportions of biological and cultural elements can and do vary among contrivances. Adding the cultural enforcement to Vashti's and Kuno's dissatisfaction, we can reasonably infer that the Machine lifestyle is more of a cultural than a biological adaptation.

Forster's "adaptation" is further complicated by the fact that the Machine society practice artificial selection on its citizens. Kuno is refused fatherhood because his "was not a type that the Machine desired to hand on." Even after birth, only the suitably weak infants are allowed to live. Forster's narrator comments acerbically on this artificial selection:

> Man must be adapted to his surroundings, must he not? In the dawn of the world our weakly must be exposed on Mount Taygetus, in its twilight our strong will suffer euthanasia, that the Machine may progress, that the Machine may progress, that the Machine may progress eternally. (133)

Forster combines evolution with technological progress to create a narrative bête noire. Exposing the weak is another form of artificial selection, but the invocation of adaptation and the image of weakness against strength have more general

connotations of natural selection. Those connotations may, in many readers' minds, cancel out the particulars of evolutionary theory. But if we look more closely — and more closely than Forster himself seems to have looked — we can identify the bête not as adaptation by means of natural selection, but as artificial selection prescribing adaptation to a narrow and unreliable niche.

The maladaptive nature of the Machine society aptly symbolized by in the Book of the Machine. At the beginning of the narrative, the Book is presented only as an operating manual with which every citizen is equipped. Towards the end, its character is more fully revealed: it is a Holy Book. Like the Bible, the Book is a survival handbook for its people. It proposes to tell them what to do in every conceivable situation, but it is incomplete:

> "Except through the vomitories, for which one must have an Egression-permit, it is impossible to get out. The Book says so."
>
> "Well, the Book's wrong, for I have been out on my feet." (133)

An incomplete survival handbook can still be useful — if relied on for completeness while dismissing other sources of information, it is fatal. The Book is the operating manual of the Machine society, representing its disregard for the changing environment outside the Machine. Forster's narrative confronts us with the incomplete nature of this survival handbook, then pointedly has the Machine society enforce it as a religious document. This is the culmination of their maladaptive lifestyle. They are committing themselves to a misleading survival handbook while glozing over their folly not with talk of evolution but with the comforting hum of the Machine. The hum of the enclosed world is what dampens "the voice of the earth and of the generations who have gone" (155). It cancels out the wider environmental soundscape and consigns the Machine people to a narrow, unreliable niche. In the absence of the niche's hum, Kuno hears the voices of humanity, and Vashti understands that her lifestyle has been a mistake. Their lifestyle is deeply disturbing to us not because they have adapted, but because they have adapted in a misguided, artificial and incomplete way. Theirs is a horror story of misplaced environmental stakes.

5. The Conundrum?

"The Machine Stops" is a lesson that seems to contradict itself. Does Forster think it is good for human beings to adapt? Should we be humble before the larger environment or put our own "essence" up as measure for it? A core question is whether Forster intends us to read beyond his narrator. Many-layered meanings appear several times, such as when Kuno reinvents the constellation of Orion or Vashti closes the air-ship blinds on Greece with the comment that it contains "no ideas"

(131). When Vashti claims that she is "most advanced" and beyond superstition, Forster's irony is almost heavy-handed: no one could reasonably doubt that she is being portrayed as a simple-minded worshipper of the Machine (132). But through the whole narrative, the narrator's perspective seems identical to that of Forster as implied author. There is no higher authority in the narrative structure, and no immediate reason to doubt the authoritative character of his perspective relative to that of Forster. The narrator speaks of "*glozing it over* with *talk of* evolution" [emphasis added]. Is it possible to read this phrasing as a reproach against the Machine people for using an incomplete concept of evolution? Yes, possible, but not plausible. Forster too often claims that the Machine people have adapted, and he never gives any intimations that he himself has a more complex and adequate conception of "adaptation." Reading beyond the declamations against evolution requires reflection on what tools, technology, adaptation, and environments really are — reflection that seems to go beyond the narrator's and thus, if Forster and the narrator are parallel, beyond Forster's too.

The artificial selection towards the maladaptive niche of the Machine society rhymes well with Forster's themes of corrupted nature and misguided societal strategies. The Machine shuts out the environment, and tinkers with evolution. Reading the short story as a call to respect nature thus makes sense. Nonetheless, "The Machine Stops" focuses on human beings more than on their surroundings. Forster's perspective on the human organism's relation to its environment is decidedly naïve: "Man, the flower of all flesh, the noblest of all creatures visible, man who had once made god in his image, and had mirrored his strength on the constellations" (157). He shows that nature is important to human beings, but that importance is overshadowed by his glorification of humanity. He insists that we must shed tools and technology to live "by the essence that is [our] soul and . . . body." One doesn't have to delve very far into these issues to run into the limitations of his stance.

The image of humanity strangled in the societal garment it has woven is powerful. It issues a straightforward warning against the folly of adapting to tools and technology rather than adapting them to human use within an environment. Read thus, "shedding the garment at will" could simply mean being alert to the environment that contains tools and technology: keeping the "garment" flexible. That meaning is plausible, but never fully articulated. "The Machine Stops" leaves us with a strong impression that we need to look outside the Machine, but the impression may easily bleed over into Luddite ardor. Forster conjures forth an undirected sense of unease rather than a clear idea of what the problem is. He

awakens strong emotions that we can, if we want, analyse and place within a wider evolutionary perspective. The real problem is not that adaptation has caused society to lose its humanity; it is that the Machine society has shut itself off and artificially suppressed normative human universals. The right lesson is not that we need to shed technology, but that we need to adapt technology to serve our natural needs within a changing environment.

Forster's misguided declamations against tools, technology and evolution feed into the image of human beings as the center of the environment. He romanticizes natural man encountering nature, talks of strength and bravery, without addressing the reality of a struggle for survival. The title of "The Machine Stops" hints at the solution he suggests for society:

> "Oh, to-morrow — some fool will start the Machine again, to-morrow."
>
> "Never," said Kuno, "never. Humanity has learnt its lesson." (158)

The human hand is offered — empty — as "the measure for ownership," and the technological "garment" loses its role as protection from the elements. At what moment, precisely, did it become impossible to shed? What would we become if we shed it? It is perhaps ironic that Forster's technological garment is "shot with colours of culture" and "sewn with the threads of self-denial." His own denial seems to consist of forgetting our dependence on cultural inventions.

Critics emphasizing Forster's cultural themes have pointed toward his pervasive Apollonian and Dionysian contrasts and his anti-industrialist attitude (Crews; Stone 3-21). Paul Peppis comments on Forster's struggle to "preserve a mystical rural England from modernity's relentless expansion" (59). So far as they go, such observations are true, but they locate themes that are at a middle level in Forster's own conceptions. As "The Machine Stops" reveals, such themes are for Forster himself encompassed within more basic concepts about the nature of humanity, evolution, and adaptation. We can gauge the scope and depth of these concepts by comparing them with modern conceptions. Vashti's uneducated heart — an early example of one of Forster's main themes — stands up against this comparison. She has simply failed to recognize or fulfill evolved human impulses necessary to her wellbeing. So also with Forster's basic and frequently repeated staging of an empty intellectualism confronting the unexpected. An evolutionary perspective makes it possible to identify that theme as a special case within a broader category: any inflexible system unable to cope with environmental conditions beyond its adaptive range.

While thus confirming and illuminating some of Forster's themes, an evolutionary perspective also allows us to identify important limitations in Forster's

vision. He is confused about the essence of humanity in relation to its environment. While repeatedly affirming the primary value of "direct experience," he isolates and absolutizes certain subjective human qualities, in essence turning them into transcendental ideas. His hostility to machinery eliminates an indispensable evolved component of human nature: the disposition for using tools. The contrast between the rural ideal and modernity depends on false conceptions of both — a rural ideal devoid of mechanical contrivance, and a modernity in which mechanical contrivance is set into false opposition with direct experience. From the evolutionary perspective, while recognizing the affective force of Forster's thematic polarities, we can disentangle their false associations and situate them within a more complete and adequate understanding of human nature.

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