Beginning with the Big Toe:
Peregrinations on Obligatory Bipedal Plantigrade Locomotion

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Why begin with the big toe, in a talk about walking, in talking about walking? The philosopher Georges Bataille, to whom I will briefly turn at the end of the talk, referred to 'the hilarity commonly produced by simply imagining *toes*' (90). So why risk provoking such a reaction, by focusing on this most risible, contemptible feature of the body? My polemical response is, because it is at the same time most significant part of the human anatomy and the one most neglected, denigrated even, in the cultural imagination. The phrase 'toe-rag', still occasionally used as an insult today, can communicate a preliminary sense of this dynamic. It originated in the nineteenth century, when it was used as an expression of contempt for tramps and vagrants who wrapped a rag around their feet or toes in order to prevent or alleviate blisters and corns. It therefore meant, and means, 'a despicable or worthless person' (OED); but it also testifies to the heroic powers of endurance of the most ordinary, and the most oppressed, section of society, the *lumpenproletariat*, and of the most ordinary and oppressed part of the body, the big toe.

This talk is about beginning with – or from – the big toe in a triple sense. These three senses, which I will explicate in turn, might be summarised at the outset in terms of the anatomical, the anthropological (or palaeo-anatomical), and the philosophical respectively – though this makes the talk sound more systematic than it is, since it will contain a number of rambling asides, or peregrinations, on the politics and poetics of the big toe. As I indicate through my rather elaborate subtitle – which signals the fact that humans are obliged to use two feet to walk, as opposed to four, and that, roughly speaking, they plant them flat on the ground – what I propose to do in this talk is simply to defamiliarize (that is, simply to complicate) the act of walking.

'A child learning to walk is engaged in attempting to make conscious material unconscious,' noted the psychoanalyst Wilfred Bion; 'only when this is done can it walk.' My aim is in one sense the opposite of the child's according to Bion, since I want to render this and other 'material' conscious, and in so doing to make the spontaneous act of walking so self-conscious as to seem almost impossible. More precisely, my talk will use the big toe to do two things: on the one hand, as I have intimated, to render the unconscious activity of walking conscious, that is, rationalising it, intellectualising it, aestheticising it, as Edwaerd Muybridge did in the late nineteenth century when he developed the technology of motion photography in order to capture the movements of humans and other animals; and, on the other hand, to relocate it to the unconscious, in the Freudian sense, restoring it not simply to the region of the preconscious, or the no-longer conscious, but to the lawless region of human desire.

The conscious and the unconscious are not so much opposed in this instance, though, as dialectically related, as in a Moebius Strip. When Walter Benjamin celebrated 'the unconscious optics' to which the camera, as a technological medium, introduces us, he used the example of walking. 'Even if one has a general knowledge of the way people walk,' he notes, manifestly thinking about Muybridge, 'one knows nothing of a person's posture during the fractional second of a stride.' Focusing on the big toe – fetishising it perhaps, as in Bunuel's famous Surrealist film *L'Age d'Or*, where the heroine sucks away at the big toe of a stone statue – might momentarily make walking seem like both a more and a less conscious activity than it ordinarily is. And it provides glimpses, moreover, of a kind of ambulatory unconscious.

So, once again, in what sense do I intend the phrase 'beginning with the big toe'? First, the anatomical response. The action of walking itself – to the extent that it can be said to have a beginning at all, and I am no doubt simplifying, even mythologizing, a little here – begins with the big toe. It is what provides the impetus needed to walk. Certainly, it is crucial to the physics of walking. Before we raise one foot completely off the ground, as we commence walking from a standing position, we roll our body weight onto the toes of the other foot. More accurately, perhaps, we transfer our body weight onto the toes of one foot at the same instant that we raise the heel of the other foot. The toes are in contact with the ground for about three quarters of the walking cycle. And of all these toes, the big toe – or *hallux*, to give it its technical, Latin name, which is taken from the Greek *halmos*, meaning to 'spring or leap' – is the most important. The big toe is what provides the crucial propulsive force needed to take a step, and approximately 40% of our body weight is sustained by it when we walk.

That's not to say, incidentally, that people who don't have a big toe – perhaps because they've lost it from frostbite, or as a result of some mechanical accident, or because they've cut it off or shot it off, as draft dodgers hoping to escape conscription have often done – can't walk effectively. And it is not even necessary, strictly speaking, to use a prosthesis, like this one discovered on an Egytian mummy, in order to walk without a big toe. The cricketer Fred Titmus, for example, who lost four of his toes when his foot got caught in the propeller of a boat while swimming in the Caribbean during England's tour of the West Indies in 1967-68 was spin bowling for his county team – though never again for his national team – within a couple of months of the accident.

So the big toe is not absolutely indispensable in enabling us to walk, but it is probably more important than any other component part of the foot's anatomy in this respect. 'Toe off', as it is sometimes called, provides the leverage needed to start walking, and to keep walking. A monograph on the human foot published in 1935, by Dudley J. Morton, explains the propulsive role of the big toe with some eloquence:

> [The] dorsal movement of the toes […] has the effect of increasing the tension of their muscles, and to such a degree that when the leverage effort of the foot against body weight has been completed, the

> subsequent toe flexion is strong enough to add a final elastic impetus to body movement which gives it smoothness and grace. At this point the stresses have been swung toward the first metatarsal bone so completely that the most important digital effort is performed by the great toe. The phase of bipedal locomotion undoubtedly accounts for the conspicuous size of that digit in man.

This is eloquent, I think, partly because of its implicit or incipient sense of the aesthetics of walking. The big toe, Morton seems to be saying, is secretly responsible for the elegance of human ambulation. In some literal sense, it is on the big toe that the rhythm and rhyme of walking depends.

Indeed, it seems a pity that when ancient Greek prosodists devised the term 'foot' to measure and calibrate the rhythms of poetic discourse – the name is commonly thought to allude to the movement of the foot as it beats time – they didn't find a place in their technical vocabulary for the word 'toe' too. The inner mechanics of the metrical foot are surely to be located in the metrical toe. The 'sprung rhythm' sponsored by Gerard Manley Hopkins – which is constructed from feet in which the first syllable is stressed, however many unstressed syllables follow – is unimaginable without the propulsive impetus of the metrical toe. This first, stressed syllable *is* perhaps the metrical toe – the term *hallux*, you will recall, is from the Greek meaning 'I spring or leap'. Here is the poetic equivalent of toe-off. It is regrettable, this omission of the toe in the annals of human culture, and the glossaries of literary criticism, this refusal of its rhythmic significance; but it isn't unexpected. For, historically, the achievements of the big toe have been systematically marginalized and denigrated.

This most glorious part of the human body is habitually, routinely regarded as base, in spite of its heroic labours. **'**Le gros orteil,' as it is called in France, is in a dual sense gross – it is generally thought to be at once excessively large and peculiarly disgusting. As Barthes pointed out, *gros* is repulsive in a way that *grand* is not'. So a kind of ideological contradiction is central to my celebration of the big toe: the big toe is an ugly, clumsy-seeming, embarrassing part of the human anatomy – perhaps the least celebrated part of all, one which is more often hidden as shameful than honoured, as it should be – and yet it stops us from stumbling and makes the elastic grace of human perambulation possible. In the body politic, truly it represents the most oppressed section of the proletariat, unashamedly lumpy, lumpen. Its 'digital effort', in Morton's formulation, its humble but titanic labour, is what guarantees the 'smoothness and grace' that is characteristic of walking in humans, yet it is despised.

The big toe is thus not merely base, in the moral or spiritual sense. In Marxist terms, it might precisely be ascribed to that realm of production called the base. The despised, occluded physical labours of the big toe, in the body's political economy, provide the infrastructural support which makes all that smoothness and grace in the realm of the superstructure, at the level of culture as opposed to mere physical subsistence, mere mechanical self-reproduction, possible. The elegance of the *flâneur*'s elegantly shod foot as

he saunters along the pavement is dependent on the hidden mechanics, the digital effort, of the big toe.

This is in fact one of the thrusts of my *manifestoe*, as I am tempted to call it, my attempt in this talk to restore the oppressed but, I hope, insurgent big toe to its rightful role as the ruling part of the human anatomy. I am thinking here of Menenius Agrippa's famous allegorical speech in Act I Scene I of Shakespeare's *Coriolanus*, set in the Roman street, which identifies the big toe as the leading figure in an insurrection of mutinous body parts against the belly, which stands in for the Senate, the locus of power. 'What do you think,' Menenius asks his interlocutor, the rebellious First Citizen, 'You, the great toe of this assembly?' I the great toe!' the Citizen responds indignantly, 'why the great toe?':

> For that, being one o' the lowest, basest, poorest,
> Of this most wise rebellion, thou go'st foremost:
> Thou rascal, that art worst in blood to run,
> Lead'st first to win some vantage.

The big toe, according to Menenius's metaphor, is the last part of the body to receive the nutrition circulated through the bloodstream by the belly, which stores, processes and distributes energy; and hence it is the most disgruntled, cantankerous part of the body, the first to agitate for revolution. In the revolution I dream of, which takes its inspiration from the martyred figure of the First Citizen, the legendary forerunner of this movement, its Wat Tyler, or Wat Toeler , the last shall be first. The lowest, poorest, basest part of the body – the big toe – will act as the vanguard of the insurrectionary body parts. The *gros* will become *grand*. I call, in other words, for the dictatorship of the toeleprariat. 'Toeleprarians of all countries unite!' is the slogan of this movement.

According to Morton, to return to his rather less excitable description of the mechanics of walking, the big toe imparts 'a final elastic impetus' to the body as it moves. I must admit that every time I read this ostensibly objective, scientific description of the mechanics of the foot in walking, which (it should be said) is scrawled in my notebook, I misread 'elastic', which itself has a pleasingly aesthetic quality, as 'ecstatic': 'a final ecstatic impetus to body movement which gives it smoothness and grace.' This misprision transmits the giddy gloriousness of walking as well as its gracefulness. It communicates a sense of vertiginous achievement to this most mundane of activities – this quintessentially pedestrian activity – and not least because the word 'ecstatic' is derived from the Greek word meaning 'unstable'. All walking, from this accidental, mistaken perspective, is moonwalking – a gravity-defying combination of elasticity and ecstasy. It might also be conceived as a kind of tightrope walking. For if one thinks about walking as one walks, if one looks down at one's feet and really thinks about it while performing this most unthinking of everyday activities, one simply stops, topples over, or collapses – like Bion's infant, who cannot walk if he is conscious of learning to do so.

So in this first, ‘synchronic’ sense, as it might be described, in the sense that walking is initially reliant on ‘toe off’, we begin with the big toe. There is also a diachronic sense in which, anatomically speaking, we begin with our big toe, and this is the second of the meanings I want to infer from the title of this talk, the anthropological or palaeo-anatomical one. For in evolutionary terms, humanity itself can be said to begin with the big toe. That is, our identity as a species hinges, or pivots, on the development of the big toe, because it is either cause or consequence, or both cause and consequence, of the fact that, to put it slightly crudely, instead of climbing trees we walk across plains. In short, it is what makes us human. In *The Descent of Man* (1871), Darwin quoted his old antagonist Richard Owen, an opponent of the theory of evolution by natural selection, to this effect: ‘The great toe, as Prof. Owen remarks, “which forms the fulcrum when standing or walking, is perhaps the most characteristic peculiarity of the human structure”.’

The basic structure of our body is shared both with our evolutionary ancestors and with our immediate relations, that is, chimpanzees and other apes. Obviously there are quantitative differences between a human and a chimpanzee brain, but structurally they are directly comparable. To put it in terms of aesthetics, formally they are the same, even if they have different contents. And this is true of the eyes, the nose, the breasts, the penis and every other body part you care to list. Except the big toe. For the big toe, in contrast to the innermost toe of our ancestors and our genetic cousins, is not in humans opposable, as the thumb is. We do not have a prehensile big toe. On the contrary, we have one that has evolved to enable us to walk rather than climb, or that has at the least facilitated walking.

The toe of the human foot is adducted – it is drawn inwards; the toe of the chimpanzee is abducted – it is drawn outwards. The chimpanzee’s big toe is opposable, like our thumb. In contrast, the toes of the human foot are convergent – the other toes have aligned with the big toe, or vice-versa. (In the case of the Doma people of Zimbabwe, incidentally, a completely different process of alignment has taken place, at least among those susceptible to a chromosomal mutation which causes a condition called ectodactyly, in which the middle three toes of each foot are missing, and the disproportionately large big and small toes are turned inwards.) In addition, the middle footbone is far more compact than that of the chimpanzee, and is consequently less mobile, more stable; and these relatively dense, rigid, solid bones can be used to lever the body in walking. So even though it now seems that the earliest anatomical changes relating to bipedalism didn’t in fact occur in savannahs, as a result of deforestation for instance, there is no doubt that these features of the emergent human foot would have helped humans to survive in the plains, perhaps giving them an evolutionary advantage over other primates.

The big toe, then, is the most distinctively human part of our anatomy. It is the feature that guarantees our unique status in evolutionary terms. As the authors of a clinical textbook on the human foot summarise this point, anatomically modern humans, which emerged about 150,000 years ago, ‘are the only living primate, indeed they are the only living mammal, that is an

obligatory striding biped.' Obligatory bipeds, as I briefly hinted at the beginning of this talk, are animals that rely solely on their hindlimbs for support and propulsion when walking on the ground. All other primates are characterised by optional bipedalism. They have a 'locomotor repetoire', as it is called, that is mixed – in other words, they use a range of means of moving about that includes, for example, balancing, hanging, jumping and quadrapedalism as well as occasional bipedalism. For this reason they have a divergent *hallux*. Humans are by contrast committed to a single locomotor mode – 'obligate bipedalism'.

The causes of the evolutionary shift to a flat, non-prehensile, in short, modern human foot are inevitably still debated, and the answers that scientists tend to volunteer only raise further questions. It might be that humans' forelimbs were used for purposes other than locomotion for prolonged periods, for some reason, and that bipedalism came to be the most efficient means of locomotion as a result (for example, it is possible that humans first learned to walk in trees, on an arboreal rather than terrestrial surface, using their arms to suspend and support themselves from higher branches). It might be that the forelimbs were used, for tool-making for example, such that the efficiency of hands for quadrapedal locomotion or climbing was gradually reduced. It is also possible that it was the development of an upright posture – perhaps in order to facilitate displays of aggression – that created the evolutionary conditions for bipedal locomotion.

The consequences of bipedal locomotion are equally debatable. Freud for example speculated in *Civilization and its Discontents* that what he called, in a slightly comic formulation, 'man's decision to adopt an upright gait' led directly to 'the decline of the olfactory stimuli'; and hence the association of bodily dirt and smells with shame. 'The beginning of the fateful process of civilization, then,' he concludes, would have been marked by man's adopting an erect posture' – that is, by become an obligate biped. The emergence of the big toe, to put it in slightly exaggerated terms, is thus responsible for the beginning of civilization, and so for that history of repression that, for Freud, defines it. This is another sense in which we begin with the big toe.

Recently, and in a rather different register of course, some scientists have argued for the coevolution of human hands and feet, claiming that 'evolutionary changes in the toes associated with bipedalism caused matching evolutionary changes in hand anatomy that may actually have facilitated the emergence and development of stone tool technology.' According to these evolutionary biologists, the marked increase in the length and robusticity of our ancestors, the australopiths' thumbs, which paralleled morphological changes in their feet, improved their ability for precision grasping. Furthermore, they propose that when *Australopithecus*, a partly arboreal, so-called facultative biped, evolved into *Homo*, an obligate terrestrial biped which probably did a good deal of long-distance trekking, about two million years ago, the directional selection on the lateral toes for locomotion 'may have caused parallel changes in the fingers that provided further performance benefits for manipulation'. In other words, the development of the toes, toes

designed for walking, made it possible for humans to become the sophisticated tool-makers that gave them such an evolutionary advantage.

This peculiar type of primate locomotion known as obligate bipedalism, then, probably first started to evolve between about five million and eight million years ago – though precise dating is extremely difficult, largely because fossils of the foot are extremely rare, since predators and scavengers have a predilection for the red marrow in the tarsal bones and consequently eat the feet of their prey. We can however be fairly confident that our ancestors, *Australopithecus*, had predominately grasping feet, and relatively prehensile big toes, until about two million years ago, as I have indicated. Obligate bipedalism, and the convergent big toe on which it partly depends, developed rather belatedly, in evolutionary terms; and the human foot, with its everted rather than inverted posture, and its characteristic distribution of the metatarsals in a transverse arch configuration, is thus a comparatively recent anatomical structure.

This might help to explain why our feet (as Klenerman and Wood state) 'are one of the parts of our body, like our backs and the veins of our lower limbs, that are prone to signs of maladaptation and malfunction'. One thinks in particular of gout and corns. The maladapted quality of human feet have of course always been of especially pressing concern, if I can put it like that, to soldiers. One of my favourite Elizabethan portraits is the one of Captain Thomas Lee, by Marcus Geerhaerts II, from 1594, which is in Tate Britain. In spite of his gentlemanly status, signalled by the lace and embroidery on his shirt, Lee, an officer in the English army that ruthlessly colonised Ulster, is dressed as an Irish kerne, one of the common foot-soldiers who travelled bare-legged through the bogs – he hoped either in order to advertise his humility or to make a complaint to the queen that officers in Ireland were treated to terrible conditions. Bare legs, naked feet, the big toe – or in the case of Captain Lee perhaps the bog toe – are signs of a sort of zero-degree humanity. The big toe as sign of our bare, forked humanity, the fact that we are always ultimately enmired, enbogged in a brutal struggle for subsistence. Magritte's *La Modele Rouge* (1935), which surely alludes to Van Gogh's 'A Pair of Shoes' (1885), is a playful reflection on the idea that civilization is nothing more than a thin veneer, and that culture cannot finally elude or repress nature.

In this context, one might also think of Mantegna's painting, from about 1480, of the dead Christ, his feet inertly thrust down towards the spectator, their wrinkled, slightly leathery soles marked with the stigmata, which are like tiny, blackened mouths crying out in pain, for lost soles perhaps. Marcel Duchamp was surely thinking in part of Mantegna's feet when he constructed his 'Torture-Morte' (1959), a sculpture of a dead foot pocked with flies – in art-historical terms, it is a deliberate *faux pas* or false step (perhaps it's also both a testament and a rebuke to Breton's claim, in *Nadja*, that *il n'y a pas de pas perdus*, there are no lost steps). In Mantegna's and Duchamp's *torture-mortes* alike the foot is the most tragic-comic part of the human anatomy – at once heroic and pathetic.

The maladaptation or malfunction of the foot – in evolutionary terms, its belatedness – is no doubt one of the reasons for the ignominious status of the big toe in the history of representations of the human body. The big toe has been developed rather too hurriedly – it is a botched job, a strangely Frankensteinian touch, in spite of its effectiveness at providing propulsive force and bearing weight. But if it is belated it is also highly advanced, a piece of technology that makes it possible to walk, and to go on walking. We are back to the contradiction that is central to my interest in the big toe. The grossest, the ugliest, arguably the most alien-looking, and hence least human-seeming, part of the anatomy, is actually what makes us human. It is the part of our body that, in spite of its crucial role in enabling us to stand upright, to transcend our brute past, most seems to be a trace of that brute past, of some primitive, primeval, muddy origin. As in some Gnostic myth, one which no doubt draws on the legend of Achilles, it is as if the god that created humanity, dipping her in fire in order to give her life perhaps, held onto her by her toe, clumsily squashing it, and so rendering it at once the most godly and most brutal of all parts of the anatomy.

This brings us, finally, to the third sense of the title of this talk, 'Beginning with the Big Toe', which relates to the philosophical dimension of this ingloriously glorious digit – and it is with some highly abbreviated comments on this that I will conclude. The only philosophical meditation on the big toe of which I am conscious is 'Le gros orteil', written by the great Surrealist philosopher Georges Bataille, whom I cited at the beginning of this talk, and published in the journal he edited, *Documents*, in 1930. This essay, which was brilliantly illustrated with three photographs by the Surrealist photographer Jacques-Andre Boiffard (photographs that, unfortunately, I don't have the time or space to discuss here), this essay effectively begins from the paradox that I have been elaborating in this talk, namely that, though it is generally ignored and demeaned, associated with mud and darkness, 'the big toe is the most *human* part of the human body, in the sense that no other element of this body is so differentiated from the corresponding element of the anthropoid ape'. The upright gait of which humanity is so proud, according to Bataille, is founded on the foot, 'but whatever the role the foot plays in his erection, man, who has a light head, a head raised to the heavens and heavenly things, regards it as spit, on the pretext that he has this foot in the mud.'

Building on Bataille, what I want to end by proposing, in the context of this symposium on walking, is a complete reorientation of the human body. In order to understand the human being as a species that walks, that is defined by walking, by obligate bipedalism, it is necessary, paradoxically, to invert its anatomy, to turn it on its head, or, like Mantegna, to lay out its body in such a way that its feet protrude towards us, so that we can confront the big toe, and its anthropological and cultural significance, in all its refulgent glory. Everything begins with the big toe. It is by taking the big toe as its starting point that we can best reorganise the semiotics of the body in relation to the mechanics of walking. Boiffard's big toe stares at us. We must stare back at it unflinchingly, sublating our sense of hilarity and celebrating its humanity and inhumanity alike – 'eyes wide open,' as Bataille says: 'open at the prospect of a big toe.'