

ANTONY GORMLEY

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In the classical art of rhetoric, mnemonic techniques for aiding the memory were highly developed. Quintillian, for example, recommends that in order to memorise a speech, the orator should think of an elegant building, with different statues in each room, each standing for a theme - a mental tour through the imagined building would then recover faultlessly the most elaborate argument. Antony Gormley's striking statues that linger in the memory, arranged in the white spaces of the Tate at St Ives, would do the trick beautifully[1]. The ancient art of memory was founded on a deep insight about human cognition - our thinking is fundamentally spatial. Deep in the folded recesses of the brain, there is a structure called the hippocampus, common to birds and beasts, which from deep evolutionary time has been dedicated to telling an animal where it is. For every animal needs to find its way home. And this most elemental calculation has driven evolution in fantastic directions, the humble bee for example, finding its way by detecting the place of the sun through polarised light detectors, then automatically calibrating that position against an internal clock and an inbuilt table, as it were, of where the sun should be in the sky at which hour in that season. As we know too well, most of us are not so good at finding our way - instead of a navigation system being built into the autonomous nervous system, we have to think about space and where we are in it. Culture and experience play an important role here, unlike the bee who comes pre-equipped with an automatic navigation system. It is just because, for us, spatial knowledge is a matter of higher-level thinking and not a low-level autonomous process like breathing, that we can be deeply intrigued and tantalised by the artful manipulations of space by which the architect and sculptor play on our minds.

In this essay, I try to bring an anthropological perspective to bear on the kind of spatial experimentation that informs the sculpture of Antony Gormley. Anthropology studies the variety of human experience, as formed by the interplay of cultural traditions with biological and cognitive constraints. It delights in showing us that things we naively take to be universal (like sleeping, walking or the pursuit of sexual gratification) often turn out to be culturally variable in form, and things we take to be culturally variable (like religion, etiquette or political process) often turn out to have universal bases. In this essay, I try to locate Gormley's spatial explorations within the context of our own cultural preoccupations, showing that some of the premises that he is playing with are circumscribed in space and time. Artists tend to think that they have discovered a mode of communication that, because it has escaped the bounds of language, speaks universally to mankind. But this underestimates the cultural roots of our thinking and activity. Consider, for example, the figures that form Gormley's Critical Mass, displayed centrally in this exhibition. The twelve postures of the series are based on four root positions of the human body: standing, sitting, kneeling and crouching. Gormley considers these to form "the hidden syntax of the human body", which he explored in the early three-part works (like SENSES, 1982, or PLACES, 1983), and in the book on CRITICAL MASS he quotes from Elias Canetti's Language of the body where the associations or 'meanings' of the basic postures are explored.[2] Now anthropologists have, at least since Mauss's (1935) article on Techniques of the body, noted many cultural relativities in postures and their uses - for example, sitting so that upper and lower legs, and correspondingly, the torso and upper legs form right-angles, is a posture associated with the technology of the chair, totally absent from many traditional cultures. We take lying down to be associated with death, but many traditional peoples (like the Tenejapans) bury their dead in a foetal (crouching) position. Or take kneeling with the weight on the kneecaps - on Rossel Island (off Papua New Guinea) this posture is enthusiastically regarded as one of the great innovations (along with diving goggles and the outboard motor) brought over the oceans by the ever-inventive white man! Even standing takes cultural form, with the Nilotic peoples (as Mauss points out) standing at rest, or even sleeping, on one foot. So we lose our universal language of posture. But the anthropological perspective is not about shrinking the efficacy of communication, by making problematic the bounds of a code. It is rather about appreciating the cultural roots of the code, understanding how those cultural specificities arise out of a background universal core of terrestrial experience and biological possibilities, and thus how codes can be distinct but underlyingly related. The objective stance helps us appreciate our own subjective realities, as I will try and show. And placing Gormley's work in the great Western tradition of thought about the nature of our experience of space is a good place to begin.

Sculpture of course is about space. Carvers like Michelangelo or Hepworth subtract space, reducing a block to a form, modellers like Rodin or Giacometti expand into it, and then turn positive space into negative mould, and back into positive space again in the finished cast. The mould is a magical thing, an empty space exactly fitting the model, and it is likely that the ancient Greek theory about the nature of space - which dominated Western thought right up until the Renaissance - was influenced by the contemporary practice of bronze casting, which (as in its complex use of copper and silver inlays) has never been surpassed.[3] Consider Aristotle's theory of space. Space for him consisted of places. And the place of a body was the "inner surface of the innermost unmoved container of a body" - place is like a mould around a body, and space is a nested series of places.[4] Think of a stone submerged in water - the place of the stone is not the solid space of the displaced water, but just the shape of the inner surface of that displacement, like a piece of cling-film wrapped around the stone (just like the place of the Reichstag could be the inner surface of its Christo-wrap, or more pertinently, the place of Gormley's body could be the inner surface of the cling film that he uses to keep the plaster off his skin). This curious doctrine came about because Aristotle was trying to stick close to our ordinary concept of place, and trying to avoid the rival (now finally triumphant) theory of space as an infinite three-dimensional void.[5] The idea of an empty space into which things can be put, like apples in a bowl, seemed to him dangerously metaphysical - the apples displace air, not nothing. His problem was that a place could not itself be a physical entity - Xeno had shown that paradoxes lay in that direction, for if so, place would itself have to have a place to be in, but what would that be? And so the idea of the place of an object as the inner skin of the surrounding stuff seemed the only way out.[6]

Anyone familiar with Gormley's sculpture will know that he is deeply interested in the mould;[7] many of his sculptures are a kind of embodiment of Aristotelian places - indeed, the mould becomes the sculpture. Sometimes the mould is a skin, a mere wetsuit of lead, sometimes it is an expanded hollow formed by attaching fixed lengths of stick to the projecting parts of the body as in his EXPANSIONS, sometimes a solid block of concrete, as in the series of which SENSE is a part. For him, the spatial properties of the thing in a place are best captured by freezing the Aristotelian place within which the thing is embedded. As Gormley said in a conversation with Gombrich:

"I get out of the mould, I re-assemble it and then I reappraise the thing I have been, or the place that I have been and see how much potency it has ... The potency depends on the internal pressure being registered."[8]

The actual technicalities of Gormley's mould-making are often discernible to the informed eye - occasionally one can see the outermost surface of the clingfilm in which his body was wrapped, more often one sees the traces of the hessian scrim that formed the thin outer skin of the mould, which was (as in CRITICAL MASS) then itself moulded, posing the technical problem of aligning the seams of inner and outer moulds. The welded seams of the

lead pieces allude to the seams of a mould, but now have a life of their own as a coordinate system describing the inner space.

There is another strand of Aristotelian thinking deeply relevant to Gormley's sculpture. Aristotle held in the *Physics* that place/space has six phenomenological directions - up vs. down, in front vs. behind, and left vs. right. These directions are imposed on the world around us by our bodies, and accordingly as we turn around, the directions turn with us. Only the directions 'up' and 'down' have an independence from the body, anchoring our directions to the celestial universe. This anthropomorphic view of the cosmos has proved, unlike Aristotle's views about place, to be an enduring legacy to Western thought. In the eighteenth century, there was a battle between the intellectual titans of the day, Newton and Leibniz, on the nature of space. Newton championed the now familiar idea of space as an infinite three-dimensional void in which things happen to be, an empty box, as it were, that could be peopled with the objects of the universe. But Leibniz cogently argued that such a metaphysical concept was unwarranted: space is simply our name for the relations between things - it is a network of places and distances between them, like a roadmap. This relational concept of space is closer to our naive psychology, and also, it later transpired, to twentieth century notions of relativity. The interchange might have been indecisive, but in weighed Kant with an ingenious and intriguing argument. Newton had to be right, he claimed, because if Leibniz's view were correct, we would not be able to put our shoes on!

Here is the argument. Suppose the Good Lord began the construction of the universe by making a giant hand (Adam's left hand, perhaps) and at that stage that was all there was in the universe. Now imagine that the Lord has recorded all the relations between the thumb and fingers, and we are trying to reconstruct whether this hand was a right or a left one from these Leibnizian coordinates - but try as we would, we could never tell whether it was a left hand or a right one, for in both cases all the measurements would be the same. So if we lived in a Leibnizian universe, we could never tell the difference between what Kant called 'incongruent counterparts', left and right hands or shoes, mirror-image patterns like p vs. q, or the two lions in Trafalgar Square. To put it another way, such an unhand universe would be a bit like a Gormley mould without an external observer. Since we can in fact tell the difference between our left and right hands, Kant reasoned there has to be some other source of our spatial intuitions, and that source is our body:[9]

"In physical space, on account of its three dimensions, we can conceive three planes which intersect one another at right angles. Since through the senses we know what is outside us only in so far as it stands in relation to ourselves, it is not surprising that we find in the relationship of these intersecting planes to our body the first ground from which to derive the concept of regions in space."[10]

From that day to this, Western thought has presumed that our everyday spatial reasoning is based on an egocentric, anthropomorphic basis. Gormley's body casts are deep meditations on this line of thinking: "What SENSE expresses is the way in which the imaginative space inside the body, the darkness of the body, connects with the outer space - deep space - infinite space"; "I think you could identify my project as a whole as a return to the body not as object but as place".[11] Gormley says elsewhere that when he was a child he had the sensation of a space behind his eyes expanding to fill the universe, and that he is trying to "materialise the sensation of that inner space of the body, and that's what I hope that these large body forms are" (Hutchinson et al, p.10) - and in HAVMANN or the ANGEL OF THE NORTH we have the largest human images made since ancient times. And of course it has to be his own body if he is to capture that Kantian intuition, that it is our internal space which, projected outwards, makes external space comprehensible.

Anthropologists have thought a great deal about the meaning and symbolism of space, and many of them have thought this egocentric anthropomorphic cosmos is inevitable, a human universal. For many social concepts are expressed in terms of these Aristotelian directions, especially in terms of left and right. The attraction of the binary opposition between left and right seems to be that in some fundamental way it is both real and artificial - we are bilaterally symmetrical beasts, so that our left and right sides differ only in their puzzling handedness, whereas our fronts differ from our backs in much more obvious ways. Social distinctions impose values on artificial distinctions, master and slave, rich and poor, leader and led, so the strange invisible imbalance our brain gives to our sides provides a powerful model for the unseeable distinctions between virtue and vice. Hence in countless societies, the left side is weak, feminine, 'sinister', and evil, the right is masculine, strong, lawful and 'right'! And so, Hertz and other founding fathers of anthropology thought that not only is the body mapped into the cosmos, but onto those divisions are mapped powerful associations:

"The axis which divides the world into two halves, the one radiant and the other dark, also cuts through the human body and divides it between the empire of light and that of darkness. Right and left extend beyond the limits of our body to embrace the universe."[12]

But it turns out that not all peoples share this vision of the universe, and it can be quite instructive to see how the spatial assumptions that inform Gormley's work can be completely absent in other cultures. Consider the following case. In the Highlands of Chiapas in southern Mexico there live a number of groups, descendants of the ancient Mayans. One of these groups, the Tenejapans, speak a Mayan language called Tzeltal. In this language, there are no words for 'left' and 'right', 'in front', 'behind', or at least not with the spatial uses they have in English. In such a language you cannot say 'Turn left!' or 'Go over there, behind the tree'. Nor are there any of the associations that Hertz assumed, of the sinister with the left, and the righteous with the right. Here are a people with an entirely different mindset about space! They lack the fundamental Kantian intuition, the grasp of the cosmos through the mapping of the regions of the body onto the world around it.[13]

But Tenejapan spatial conception is not the slightest bit deficient. For they have a rival scheme. They envisage the whole world as tilted down towards the north - they live in a rugged mountainous territory, which does in fact tend in that direction, although cut by many twisting rivers. All their directions are anchored to this tilted plane. Instead of saying 'Turn left' they can say 'Turn up', or instead of saying 'Go behind the tree' they can say 'Go to the downhill of the tree'. Even things in personal space will be described as 'up', 'down' or 'across' - as in 'Pass that uphill pencil just across from you'. In such a system the body and its axes plays no role. Their space is disembodied.[14]

What difference does it make? Well, consider Kant's prediction: people who fail to bring embodied intuitions to bear upon the nature of space should not be able to tell a left-handed object from a right-handed one. To some considerable extent, Tenejapans really do have difficulties distinguishing mirror-image objects, and this is not just an effect of lack of schooling, as there are other Mayan groups matched for level of schooling who are unlike the Tenejapans and just like us. A Tenejapan presented with two photographs, where in one there is a basket to the left and a bottle to the right, and in the other a bottle to the left and a basket to the right, is likely to deny that there is any difference between them. The pattern is confirmed by the way they construct their cultural environment - in the traditional culture there were no left-right regularities, like our traffic rules, doors that open to one side, writing system read from left to right, handles or knobs turned in one direction, pairs of shoes or other 'incongruent counterparts', as Kant would have it.

If lacking a body-based coordinate system like ours has the predicted Kantian negative effect, having a system of coordinates locked to the landscape

has other positive effects. If I put a knife and fork in front of you on the table, fork to left and knife to right, and then turn you around to face a table opposite the first, and tell you to make the same arrangement, you will put the fork to the left of the knife. But Tenejapans given the same task will put the knife to the left of the fork. Why? Because when you turned around, you turned your bodily spatial coordinates with you, but since they don't use such coordinates, but rather use coordinates fixed in the landscape, when they turn around the fork to the north and the knife to the south remains the fork to the north and the knife to the south. In such a system, the body no longer frames the universe. Instead the body is just one of the things that furnish the tilted world. It is striking to watch a Tenejapan, who is facing north, point to somewhere south of him by pointing through his body - the body is even rendered invisible, a mere point in spatial calculations.

Tenejapans have no sculpture, and their only artform is a weaving style in abstract patterns that contain no representation of the human form. Still, there is another component of their language and thinking that is highly relevant to sculpture. They have a system of part names which can disassemble any object. We too have the language to talk about the top, the bottom and the sides of anything. But Tenejapans go further: they have a system of twenty part terms which can be applied to any object, old or novel, natural or man-made. So a chilli pepper, or a stone, or a house, each have their instant paronymies. To achieve this, there has to be a mental system that cracks objects apart at their natural joints as it were, treating every object a bit like a crustacean with an exo-skeleton. Then each part is inspected for its volumetric properties, its long and short axes, and the nature of its surfaces. Bulbous protrusions of a certain shape, warrant one part name, pointed protrusions another, and so forth. Now, the words themselves are drawn from the names of body-parts, including 'face', 'hand', 'belly', 'breast' and 'back', and here the human body comes back in, not as a frame for space but as just one model for the dissection of things. But even now, the human body is only one of the possible models, for animal bodies and plant parts also serve as models, with terms borrowed for example from 'horns' and 'roots'.^[15]

Tenejapans are not the only natural geometers of this sort, for it turns out that the human visual system does something very similar at a deep unconscious level in all of us. The problem for the visual system is that we constantly see familiar things from unfamiliar angles in varying light conditions, and the main point of vision is to deliver to us a world of recognisable things - we need to know that that blob of green is a tree, and that strip of grey a road. To achieve this miracle, the visual system must analyse the volumetric properties of things and catalogue the shapes of all the parts that belong to them, so when we see one part clearly from one angle we can predict the rest. Vision theorists have developed elaborate models for this. One of the more interesting theories suggests that we crucially use our knowledge of organic shapes in this process.^[16] Consider a daffodil bulb. Its bulbous shape suggests the orientation in which it grew, while its pointed tip suggests rapid growth in that direction. When we look at shapes like Gormley's EXPANSIONS we cannot avoid the associations of organic growth; they look not so much like man-eggs as man-corms. We can feel the organic pressures, the swellings and pressures, the counterforces to gravity, so that a shape is not merely a static thing, but a stage in a causal process, where the shape predicts the future expansion. Gormley tells Gombrich that he was much affected as a child by the life mask of William Blake in the National Portrait Gallery: "There is a sense in which there is this pressure inside the dome of the scalp and then also this pressure behind the eyes which gives that work a kind of potency. It was as if something was trying to come through the surface of the skin"^[17] His body shells recreate this: "I want to recapture that sense of imaginative space inside the body. I want there to be an internal pressure in the work, that has a relationship with the atmosphere which we sense with our bodies through the skin of the work".^[18]

As the Tenejapan case illustrates, spatial cognition among humans is culturally variable. Unlike the bees, the birds and the beasts, higher-level cultural cognition intervenes in the fundamentals of how we humans reckon where we are. Gormley once studied anthropology, and has spent long periods in India, and the facts of cultural diversity are not lost on him. The works that are represented in this book and exhibition show him struggling with the relativity of the theme that dominated his early work. That theme was indeed the central theme in Western ideas about space, how the coordinates of the body come to frame the universe. It is anthropomorphic - the planes of the body, left and right, front and back, up and down are used to give us the regions of space. It is egocentric - each such frame is our private frame, and so Gormley's body is the model.

But in these later works, Gormley is playing with other ideas. First, there is STILL. This is not Gormley's body of course, but that of his baby daughter, so that here the world is clearly centered on another being. Because it is an infant deserted in a large space, our empathy is immediate - we want to rescue the thing from the floor. To be 'deserted' is from the Latin to be unjoined, and the infant's dependence on other humans reminds us that many of Gormley's early works seemed to be about solipsistic solitude, there strong, but here exposed as weak, for in reality the species is not solitary, but gregarious. In other respects, this is a classic Gormley work. The body-space is encased in its lead shroud, its embodied Aristotelian place. Inside that place is an internal void, the infant's subjective space, into which the Kantian directions are not projected - after all, only the surgeon thinks of the inside of a body in terms of its dorsal, ventral, left and right directions. For Gormley that unmeasured internal space, where the orthogonal coordinates of our external mental projections do not extend, is the exciting uncharted territory that he has been exploring for decades through sculpture, breath control and meditation. Still, the space is encased in a place, and that place has its own shape, articulated through the welded seams of the lead. This segmentation of the body into its parts returns us to the theme of the dissection of objects, as in the Tenejapan system of part-names. The visual system also does this trick of carving up of seamless wholes into their constituents, reading exo-skeletons onto smooth skins, so we can distinguish things by the orderly array of their parts. Gormley's empty mouldings of space have inscribed in their seams a kind of coordinate system, mapping the outer edges of the interior subjective space, a bit like Aristotle's celestial spheres which mapped the cosmos in such a way that the tropics could be projected back down again onto the surface of earth. And since it is the body's parts that are so segmented, they carry with them the kind of values and associations Hertz imagined - we face what is in front, fear what is behind, value the right side over the left and so on. A baby lying on its back is open for interaction, an infant on its front is closed off from the world. But how exactly does this dissection into parts work, isolating parts within parts, finding within the continuous smooth chest of the infant's mother, the breast, within the breast, the nipple? Recollect the idea from the theory of vision, mentioned above, that the causal history of a shape is somehow inscribed in its contours: that nipple formed, and then in maturation that breast pushed forth from the chest, its shape suggesting swelling. And a baby's body is like a bulb: it also suggests a pattern of growth, where the limbs will push out away from the head end, and the head itself will swell into a repository of future conceptual growth, the skull forming a place for that greatest mystery, human consciousness.

The second work, CRITICAL MASS, is also a substantial departure from the original body casings. Now we have a tangled heap of iron casts of body casings of the artist - all of them are Gormleys, as it were. But again, the transformations are troubling. Each body's Aristotelian place has gone through a metamorphosis. As before, each piece derives from a cast, a shell moulding an empty space once occupied by a body, but now the empty space has been filled with solid iron. Crucially, the iron is not just a cast in the classical manner - then it would have the contours of the inner surface of the shell. Instead, it is a cast from a mould taken of the outer shell, originally a casing of plaster and hessian, which was itself a mould. It is a bit like a fossilised dinosaur's egg - a transformation of a mould around a moulded space into a solid. Still, this concretion of space (to use one of Hans Arp's expressions) freezes the properties of the original casing, which in turn captured the internal pressures of the body within.

Each figure is an iron cast, a massive three-quarters of a ton of metal, made from a mould of a mould which once surrounded the artist. The outer mould has faintly reproduced the exo-skeleton of the inner mould, with its dismembered pieces reassembled, while it has also left the imprint of the

edges of its own parts in the metal. Each original inner mould or body casing is an Aristotelian place, the inner lining of the space surrounding the body. But now, not only do we have the spaces 'concreted' in solid iron, but all these castings of Aristotelian places are heaped up, as if in passing through our postures we leave behind a vast series of Aristotelian places, a junk heap of space as it were. But that is not quite right either, because then each place would still be in its original place, and each posture would be in its original orientation, and that would be less a junkyard than a dreadful littering of the landscape. Perhaps it is a bit like a fossil collection in the basement of a neglected museum - frozen Gormley-places, filled with an alien mineral, and then collected from the landscape of his wanderings into a heap.

There is a further twist. There are 60 tokens, or instances, drawn from 12 types - a dozen different postures. If, playing the palaeontologist, we pulled apart the heap, we could arraign the twelve types in a great series, which would represent the unfolding of a man from a crouching carapace to a stretching, erect form on its toes. Our fossil series could represent an ontogenetic development, from foetus to yearning adult, wherein Still would be an additional, intermediate stage of development. Or we could interpret it as a phylogenetic sequence from a primitive groundhugging species to a developed, intelligent biped. Because the specimens have been yanked out of their strata, and heaped in a meaningless array, we can't easily decide. When the first fossils from the Burgess Shale were discovered, representing animals utterly bizarre to our eyes, their canonical orientation was misinterpreted - for example, the delightfully named *Hallucigenia* was thought to walk on what later turned out to be spines along its back.[19] In the same way, these heaped figures seem to defy the idea of our canonical orientation, and suggest massacre and destruction. Finally, notice that each type has five tokens. These tokens are identical casts, mechanically made heavy-weights, and (to pun) mass reproduced, as suggested by the little roundels which are the sawn-off 'risers' where the molten metal filled the shafts left to vent the gases from the mould.

The third work, *FIELD*, is a complete departure from all of this. It is not moulded, it is modelled; it is not mechanically reproduced, but bears instead the direct imprints of the many hands that made it. It is not about voids, but about filled spaces. It is not about an egocentric view of the universe, but about myriads of other eyes on each of us. The little elements in this seething humanoid ant heap are primordial forms in human art - figures very much like them can be found in the earliest stages of the first agricultural communities of the Near East. The Mayan neighbours of the Tenejapans, the Chamulans, have long made such figurines, which you can find in the market of San Cristobal de las Casas, dressed carefully in Chamulan woollen costume. It is important to *FIELD* that, like these ancient exemplars, all of the figurines are hand-made and vary slightly individually - had they been casts or machine-made replications the message would have been entirely different. Then, just as in Gormley-places, we would have been confronted by multiple concretions of one view of the universe, but here we are affronted by multiple views of each of us.

How and why do we so quickly presume that these little figurines are humanoid, and not just lumps of clay? Because there is a special and ancient part of human cognition dedicated to face-recognition; that's why we can't help seeing faces in clouds or in patterns in linoleum, and why in primitive art the face can be reduced to such a minimal configuration and yet we still see a face. There's also an ancient part of human ethology, shared with many other mammals like dogs: the stare is a confrontation, we stare down our enemies. Here again there are cultural overlays. In Tenejapa, people avoid talking face to face - they prefer to sit side by side to avoid each other's gaze. In contrast, we in the West tolerate mutual gaze up to a point, then avert our eyes. But the little people in *FIELD* will outstare all the viewers, and this imparts a confrontational element to the work.

Gormley talks about the work as being about cultural confrontation, cultural change and globalisation. It is the invasion of our sitting rooms by the armies of the dispossessed.[20] They are primitive, but not in the sense of uncivilised but in the sense of fundamental, reminding us of the need to return our own civilisation to a balance both with the ecology and our own unconscious. *BED* takes us back to Gormley's early work. Of course, here is a cruel joke perpetrated on the museum curator -there is something manifestly absurd about the difficulty of preserving a loose assemblage of thousands of slices of Mother's Pride for twenty years. The glass case now protects the viewer from unintended fumigation! But, nevertheless, this is a deep if humorous meditation on the nature of space and our place in it. What seems like the indentations of a couple in a bed of bread is in fact formed on the basis of one body (perhaps an allusion to the epithet of the spouse as one's better half!). Look carefully and you will see that the two indentations are mirror-images - see, for example, that the right edge of the left hand figure's lower leg is formed by two intact slices of bread, and the same pattern occurs on the left edge of the right-hand figure. In fact, we are here once again confronted with the Aristotelian place of Gormley's body, but now rendered visible, through the device of cutting the mould (forgive the pun) through the middle, along its equatorial meridian (compare the seams on the forms of *CRITICAL MASS*, or the welds on *STILL*), and opening it out like a bivalve shell. As we grow up, our Aristotelian place eats into the surrounding space, just as the occupant of the body-space of *STILL* will swell to occupy an adult volume in due course. To make *BED* Gormley ate his way through something like fifteen hundred slices of bread, two at a time, to fit a template of his body. Two at a time because each pair of slices was then identically indented - one ended up on the left half of the bodymould, and the other on the right.

But here's the twist: the slice used to assemble the left-hand half of the mould was flipped over, or more technically 'reflected' along its axis. Moreover, the template Gormley used to make each layer was itself flipped over. So we don't have the two different halves of a complete body-mould after all - we have just one half of a Gormleyplace replicated in mirror-image. Now notice that here's something we can do with a plain surface, an effectively two-dimensional object like a sheet of paper or a piece of bread with a ragged edge: we can turn it over to get its reflection. But to do that, we need an extra, third, dimension. If we have a three dimensional object like my left hand, we cannot make its real reflection, that is, its right hand counterpart, simply by turning it over - in the world we inhabit there is no way to make a right hand out of a left hand simply by rotation in three-dimensions. Which is why the loss of a left-hand glove is a minor domestic tragedy. That was Kant's point, mentioned above, about 'incongruent counterparts' - such enantiomorphs (as they are technically called nowadays) are totally different shapes yet with identical volume and identical measurements, and their difference can only be captured by recognising a larger spatial envelope which is oriented by our intuitions of directionality. Now, sixty years after Kant's 1768 seminal paper on incongruent counterparts, Mobius noted that you could after all convert a left hand into a right hand by turning it over in a fourth dimension. But that is what it would take - a world unlike our own, with an extra dimension. We are now in a position to comprehend Gormley's elaborate spatial joke: he has done the impossible, he has made an enantiomorph, a left-handed version of the right-hand indentation of the lower half of his body, simply by flipping pieces of bread over in the third earthly dimension! His solution to the impossible exercise can be explained this way. Think of the right hand indentation as a three-dimensional map of the Grand Canyon, with each layer of bread as a contour line cut out of, say, a sheet of plywood. Now obviously, we can turn each sheet over and reassemble them in the same order, and we will have a non-actual enantiomorphic Grand Canyon, which snakes East wherever the real one snakes West, and vice versa. It's an approximation to Mobius' use of a fourth dimension that works only because we are willing to treat the plywood, or the bread, as if it has no thickness, as if it is two-dimensional. So there, next time you take a bite from a slice of bread, reflect on its spatial complexities, and as you ingest it into your Aristotelian place, eating your way through time and space, spare a thought for the curator of *BED*!

Gormley's playful investigation of the mysteries of left-hand inversions of right-hand figures is predicated on a cultural universe of preoccupations with mirror-image asymmetries - we drive on the left, read from left to right, put left shoes on left feet, and shake our right hands. But as we have seen, there are peoples like the Tenejapans who don't care a hoot for left and right, because they have opted for a disembodied spatial system, in which humans are specks in an oriented landscape. Much of the finer intellectual play of *BED* would be as lost on them as it is likely to be on the hurried

museum visitor - but the idea of a bodily impression left on a bed of bread with all of its strange associations would be as immediately accessible to them as it is to us. Much art derives its impact from exploring the narrow edge between universal association and cultural form - we can be enraptured by a piece of 'primitive' sculpture (as any visitor to the new gallery in the Louvre will know) just like we can be haunted by a song in a foreign tongue, but our appreciation gains another dimension when we can hear the cultural code.

There is a great deal more that could be said about the relation between the pieces exhibited and the spaces they occupy. Needless to say, this is also a Gormley preoccupation, thrust into our consciousness here by the contrast between FIELD, where the work bursts the architectural seams, and STILL, where the loneliness of the figure is essential to its poignancy.[22] Sculpture converses with its surroundings, with the spatial volumes it inhabits, and the tones of that conversation are as much an articulation of the cultural and the universal as the pieces themselves. That's what sets sculpture apart from the illusions of painting - it is in the world that we inhabit too. Our view of our own place in that three-dimensional world has been the subject of much scientific enquiry, so that in this domain of human thinking and feeling, art and science offer parallel perspectives on the labyrinth of mind. We are lucky to live in a society that through its wealth allows us the luxury of such ruminations. Gormley's sculptures in the Tate at St Ives are meditations in bread, clay and metal which every visitor following Quintillian's advice, will find deeply memorable.

Notes

1. In Artist's Choice in John Hutchinson, E. H. Gombrich & Lela B. Njatin, Antony Gormley (Phaidon. pp. 106-113), Gormley quotes a long passage from St Augustine's Confessions which is in fact based on the much older classical theory of memory summarised by Quintillian -see Frances Yates 1966, The art of memory, University of Chicago Press.
2. I am indebted to Antony Gormley for a day-long conversation on this amongst other themes.
3. For example, the lips of the Riace bronzes were cast in copper, then inset in the mould into which the bronze was poured. Other parts like the hair were cast separately in more malleable alloys to allow retooling, then a third pouring used to join them on. See N. Penny, 1993, The materials of sculpture, Yale University Press, pp.226-30.
4. Aristotle's Physics, 212a(20-21), in W. D. Ross's translation quoted in E. Casey 1997, The fate of place: a philosophical history, California University Press, p.55.
5. The history of our Western scientific concept of space is a long struggle to free an abstract concept of space from the more concrete idea of place. As Einstein put it, "Now as to the concept of space, it seems that this was preceded by the psychologically simpler concept of place" (in the preface to M. Jammer 1956, Concepts of space: The history of theories of space in physics. Cambridge, MA: Harvard University Press, p.xiii). For much detail on this theme, see E. Casey 1997, The fate of place: a philosophical history, California University Press.
6. See Casey, op. cit., or Sorabji, R. 1988. Matter, space and motion: theories in antiquity and their sequel. London: Duckworth.
7. See Gormley's conversation with Gombrich in Hutchinson et al. Op cit. pp 17-18.
8. Hutchinson et al. Op.cit.p.18.
9. Kant's ingenious argument is still hotly debated - see Van Cleve, J & Frederick, R 1991. The philosophy of right and left. Dordrecht: Kluwer.
10. Kant, E. 1768. Von dem ersten Grunde des Unterschiedes der Gegenden im Raume. Translated as: 'On the first ground of the distinction of regions in space'. In J. Van Cleve & R.E. Frederick (eds.) (1991), The philosophy of right and left: Incongruent counterparts and the nature of space (pp. 27-34). Dordrecht: Kluwer.
11. From Field for the British Isles, pp. 76-77, and p.80.
12. Hertz 1909 (1960:102), The pre-eminence of the right hand: a study in religious polarity. In R Needham & C Needham (eds.). 'Death' and 'the right hand' (pp. 89113). London: Cohen & West.
13. See Levinson, S C & Brown, P 1994. Immanuel Kant among the Tenejapans: Anthropology as empirical philosophy. Ethos, 22(1), 3-41.
14. See Brown, P & Levinson, S 1993a. "Uphill" and "downhill" in Tzeltal. Journal of Linguistic Anthropology, 3(1). 46-74, and Levinson, S C 1996b. Frames of reference and Molyneux's question: cross-linguistic evidence. In P Bloom, M Peterson, L Nadel & M Garrett (eds.). Language and Space (pp. 109-169). Cambridge, MA: MIT Press.
15. See Levinson, S C 1994. Vision, shape and linguistic description: Tzeltal bodypart terminology and object description. In J B Haviland & S C Levinson (eds.). Special issue of Linguistics, 32(4), 791-855. Berlin: Mouton de Gruyter.
16. For the general theory of volumetric analysis for object-recognition, see D Marr 1982 Vision, San Francisco: Freeman, and Biederman 1987, 'Recognition by components', Psychological Review 4(2):115-147. For the theory of organic history in object-recognition, see Leyton, 1989, 'Inferring causal history from shape', Cognitive Science, 13:357-387.
17. Hutchinson et al p. 18.
18. Ibid p. 140.
19. Simon C Morris, The crucible of creation: the Burgess Shale and the rise of animals. Oxford: Oxford University Press, pp. 54.
20. Antony Gormley, 1994, Field for the British Isles, pp 71-2. Llandudno: Oriel Mostyn.
21. Mobius 1827, extracted in Van Cleve, J& Frederick, R 1991. The philosophy of right and left. Dordrecht: Kluwer. The whole book is an excellent introduction to the puzzles of this paragraph.
22. The preoccupation becomes self-conscious in some of Gormley's works, like Testing a world view, where the seated or stretched body is 'tested' against the orthogonals of the room. See Antony Gormley, revised edition, Phaidon. pp. 137-9. Anthropologists know in fact that peoples who live in round huts don't quite see the world we do - they do not, for example, fall for psychological illusions based on the apparent convergence of parallel lines in perspective.

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