

# **The Prehistoric Smile**

**Mark Lythgoe and Richard Wentworth**

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*In 1999 Richard was introduced to the neuroscientist, Mark Lythgoe. Their mutual interest in how people form ideas, and how they evolve and communicate them, led to a continuing lively exchange. The following text has been excerpted from a conversation in November 2004 when artist and scientist met to talk about some of their common ground.*

RW: So what is an Opabinia?

ML: I wonder if you've heard of the Burgess Shale? It's a land form which holds the fossil remains of many creatures from, I think, the Cambrian era – hundreds of millions of years old. Well, one of the animals that they found was this bizarre five-eyed creature with a nozzle-like snout and claws on the end. They called it Opabinia.

RW: You're making it up!

ML: No, but what had actually happened was they assembled the remains of some of the creatures wrongly, for example – the stilt-like legs on one creature were really spines! When other researchers realised the mistake and tried again, they came up with a completely different creature. So just looking at things from a slightly different viewpoint made a lot of difference.

RW: That's beautiful. But however you put the animal together, it wasn't going to survive?

ML: It was probably an evolutionary dead-end whichever way!

RW: This whole thing about evolution... Can you say something about our eyes being side by side as opposed to one above the other? And peripheral vision? Why does the stuff at the edge always seem more interesting? Sometimes it seems we're only really creative in the outer suburbs. Is this just psychological or do you think there could be some link with the nature of peripheral vision?

ML: Yes, it's interesting. We seem to have evolved binocular vision because that's the most efficient mechanism for seeing three-dimensionally, judging distance and so on. But actually we've sacrificed a certain amount of peripheral vision. There *is* some confusion in the way people talk about peripheral vision: they may say they look at things on the periphery of life, which is a beautiful metaphor for the periphery of the eye, but the relationship *is* just in your head. Physically, the receptors at the side of your eye are more sensitive to motion, so in the periphery of your vision you tend pick up movement, you don't see form, texture, colour. It is still very important though to be able to catch something out of the corner of your eye – it's a survival mechanism. Of course we've taken it one step further and developed our perceptual system. Primitive life forms only have two things they can

do: if you go back many millions of years, when you're just a little amoeba, you have these two things – tropism and reflex. So, if the light is the food, the little amoeba goes 'ooh, go towards the food'; if the light is the enemy, the amoeba runs away – that's tropism. Reflex –

RW: Like forward and reverse.

ML: Like forward and reverse. Reflex means you stab the amoeba and the amoeba recoils. Of course we still have some of this. If I was to blow into your eye, you'd have a blink reflex. You can't help it, it belongs to the reflexive nature we're left with – our bowels, our knee-jerk reaction, those are still reflexive. But being tropic and reflexive is very, very inefficient: what tends to happen is that you catch the little movement in your eye, and you run away. Well of course if it's Grandma coming with afternoon tea, that's a complete waste of energy. This is where perception comes in: what humans have is a highly developed perceptual system. So we make a guess from that movement whether it *is* Grandma or whether it's a hungry lion. And if we're making a guess, that means our brain can imagine many possibilities. Then we make a judgement and decide on one: we either run, or stay. The perceptual system allows us to be more efficient in life.

RW: You've written something about the binary nature of the way we make choices – that was brilliant.

ML: I think it's really important. Because thinking 'should I stay? should I go? should I stay???' endlessly is pretty hopeless. We must resolve the ambiguity in life, to find a workable solution, even if it is a little makeshift. Make-do events, no-nonsense shortcuts, are what let us get on with everyday living. And our wonderful resourcefulness here is a product of our fertile imagination – an imagination that is uniquely human. A fly has a brain the size of a pin head, yet it has amazing control of its motor and sensory functions, and can avoid our primitive swipes with ease. Our own disproportionately large brains allow us to imagine numerous fictional possibilities and, more importantly, to then choose the one we want.

And something else comes in here, another layer – a gestalt, our need to group objects together in a larger aesthetic. An ability to group things into a whole from very limited information is an inherent part of our perceptual system. Say you are in a forest late at night, and detect a vague movement among the trees ahead. Friend or foe? If you guess it's friend, based on the limited information, and choose not to run away, you will be rewarded with that 'ahh' or 'wow' feeling when they appear out of the trees and you recognize them fully. That feeling is like a little reward for getting it right, and actually comes from your brain generating a few chemicals, giving you a buzz, a little rush. And this repayment encourages us to remember a good move or ingenious act, just in case we might need it in the future to help our survival strategy. Neuroscientists believe that memories linked to positive (or negative) events are far easier to remember and therefore recall for future use. That little biochemical hit is telling you 'you've done really well, do that again the next time'. So a lot of the by-products, the reward – when we enjoy art and

things like that – is effectively the brain reminding us that we are doing well from a survival point of view.

RW: When you wrote about this, it seemed as near a metaphor for an orgasm as I've ever read.

ML: Yes, I think it is. There's lots of ways our brain uses the chemical hit. Fixing the good move in memory is important, because actually we are designed to forget lots of our memories. We've evolved systems to lose memories, because if we retained everything we'd go crazy. But it's important, of course, if we learn that fire burns, that we don't have to relearn that and relearn that and relearn that. So there's a chemical hit that's associated with certain events – happy or sad or frightening or whatever – that's again the brain reminding us to remember that one lesson.

I think this is very pertinent to your photographs. I remember that picture you took – *Islington, London 1976*, with that old sheepskin coat being used as a makeshift car wing. Those pictures make us smile, don't they? I think that's because when we see people doing ingenious things we admire that, and it's lodged in our memory with that 'aah, yes', in case we might draw on that inventiveness again in some future fix.

RW: That makes sense to me – the way noticing becomes memory.

ML: Yes – because, it's laid down in our genes from way back. Lucy, our most well-known hominid ancestor, is around three million years old – *millions* of years! But it's likely we've only had language for just a tiny fraction of that, at most a few hundred thousand years. For *many* hundreds of thousands of years, we've been in the environment with the sun in the sky, the wind blowing across us, the trees growing in the same way, creating fires in the same way, and all these things were incredibly important to us. They've left their imprint on us. I think it's suggested that, certainly when artworks are created to represent let's say a landscape, they're tapping into that 'environmental module' in our brain, that prehistoric link we have with our environment which is so crucial.

RW: And now we've evolved this big brain which, as you say, can fictionalise...

ML: You might say, well maybe our intelligence resides there, in that large brain. But many animals are also intelligent in their way. But it's the ability to imagine, to be able to imagine the world in lots of different ways, which embodies our creativity, our ingenuity. I don't think that a fly can imagine lots of scenarios, it just reacts, it's very reflexive, and it's very good at being reflexive, that little brain. But, for us it's our imagination. And the extra brain size allows us to be able to create these different scenarios.

RW: Something happened that was more than just about our survival. We got this spare capacity and we survived a little bit better because we were rehearsing all these possibilities. Then maybe we get to a point where we can use those

possibilities in an almost playful way, which I suppose would be like if once you've learned to walk, you would discover that you could dance.

ML: This is a good point. So we get this extra bit of brain and what else do we do with it, beyond just survival? We start to go dancing, to create paintings, music. But why would we waste all that energy – because we're not designed to waste energy whatsoever – on these biologically wasteful tasks, such as artwork? And some people might say in fact it is a complete waste of time, it doesn't help us, from an evolutionary point of view. But I support the notion that this is where the brain, like the peacock's feathers, is a sexual ornament. There's reasonable evidence to suggest humour, wit, intelligence, imagination, are factors people look at in assessing compatibility. And of course artwork is an expression of your capacity to be able to imagine, and then to represent the quality of your genes. So the brain may effectively be a sexual ornament. Your sculptures are just an extension of your penis, that's what they are.

But of course it's interesting we only developed language comparatively recently, and, perhaps more than coincidentally, artistic representation, both of which depend on an imaginative use of ambiguity. And both constitute a symbolic use of signs to communicate, and an imposition of symbolic meaning on reality.

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RW: What about 'disinhibition'? That's a special interest of yours?

ML: Well, disinhibition is a new notion that I've been trying to bring to artwork. Psychologists have been talking about disinhibition for decades. And neuroscientists usually talk about it in terms of physical damage to the brain.

RW: And chemical imbalance?

ML: Yes. A person may become disinhibited following neurological damage or a change in the brain chemistry. We have these two pathways in the brain: inhibitory and excitatory. And they compete all the time for every single emotion, every thought, everything we do. So what happens is, if part of the inhibitory pathways becomes damaged, for whatever reason, then the excitatory ones would come to the surface. A person would have a massive personality change – become verbally aggressive maybe, and dreadfully irritable beyond his control. But we have these pathways in many parts of the brain, and hence we come to the notion of disinhibition in artwork. I met this chap, Tommy McHugh –

RW: He's someone you've actually worked with?

ML: I've known him for about two years. We've just written a paper about him for the *Journal of Neurology*. The title is 'Obsessive Prolific Artistic Output Following Subarachnoid Haemorrhage'. It's the only case like this reported in the world. Tommy always describes it in terms of something bubbling up to the surface. He

can't control it but he has all these associations, wonderful, interesting, exciting associations that are taking him in all different directions. So many people in this world are trying to find new ways of being creative, but some people are able to do that automatically. It just seems they don't have the filters that the rest of us have.

RW: But are those filters social?

ML: I think so, yes, of course. When our thresholds where we decide what is socially acceptable or not acceptable are defined culturally, completely culturally, and what we have are the pathways in the brain to be able to define where those thresholds lie.

RW: So that's a map?

ML: That's effectively a map. The brain is able to map out where those boundaries lie. And then they're imprinted within our brain and we can apply them to various situations. Some people don't have those thresholds, or their thresholds are in a different place, and are not defined socially and culturally. Take people with Tourette's syndrome -

RW: Tourette's syndrome is a huge umbrella - it's not just people who swear a lot?

ML: No, in fact there's a suggestion that people with Tourette's are incredibly creative. But they find inhibiting certain action very difficult. And they're sometimes driven to do things that are outside the social norm. So they don't have the same threshold; their boundaries are a little bit further out. Now of course this can be incredibly productive, and in our society I think we're trying to look at people with different brains in a more flexible way. Just because your brain works slightly differently from someone else's doesn't mean you've got brain damage or that you're disadvantaged in any way. Tommy McHugh is probably the greatest example of this: this is a guy that *has* had some damage to his brain; he's got a completely new personality; he's lost his wife, his friends... but gained a lot. And he says he would never go back to being the old Tommy. He prefers the new Tommy. That's the remarkable thing. This is about identity. What defines you as an individual? Is it the clothes you wear, the way you look? Presumably if you change the way you look you still *think* the same. But what happens if you think differently? Are you still the same person? I think we clutch onto our identity very much. If there was more of a fluid interpretation of identity, we'd be a lot more open to the idea that changes in our brain chemistry are a good and positive thing to look at, because they do allow us to do things that we wouldn't normally do.

RW: Where does 'normality' come into all of this? Because - it's very interesting - the more you say, the more political it seems.

ML: Yes, it is.

RW: I'm actually slightly trembly about how society decides what's normal, and what's not normal, and what we do to people who we say are not normal, or less normal; how the society regulates itself in a way which of course is the big model for how we regulate ourselves; when we fart, or don't fart... And this rubs up against the kind of open territory that's always proposed by art. But then art is never as open as people propose it to be: there's still the idea of this expressionist space, wild people and what have you, but you don't have to meet very many artists to know that it's not like that at all.

ML: Can I put this another way: let's say if I was to suggest to you, not that you've got in any way brain damage, but that you have similarities with Tommy or other patients. All I means is, there's a change in the biochemistry of your brain; for whatever reason, your brain is different. There's no doubt in my mind that your brain *is* different to mine, and thinks differently. You are one of the most disinhibited people I know! There's two ways I'd say this. One, you're disinhibited because you move from topic to topic to topic very, very quickly, all over the place, spontaneously, and you make me feel I'm on some kind of helter-skelter trying to keep up with you. Then, also, you have this element, that when you talk, it *is* slightly outside what we might call the social norm; it's this constant stream of disinhibited notions and thoughts and new associations that are coming in.

RW: Well, one of the things that all this is inducing in me now is an absolute storm of ideas! So while you were speaking I was thinking, oh, is that like architecture? You know, you can walk down some streets and you could say, well, they're all buildings, but actually they have incredibly different meanings. It's actually very interesting with very young children to walk along and say, 'What are all these?', and they'll credit some as being houses, and then they'll come to one and say 'it's a police station'. One of the things I taught myself to do and how I like to investigate a city, is to ask what something is *not*, not what something *is*.

ML: It's interesting when you talk about kids, because it's suggested that kids think a lot more in images, whereas as you get older, you lose the ability to think in images. And of course children are a lot more disinhibited than adults. You know, their social thresholds are completely different. I think it was Einstein said that we should be able to remain thinking like a child, or he thought like he did as a child, meaning he could think in images. And in some respects because of that, he was more disinhibited, so maybe we need to latch onto those ideas, to think like a child.

RW: I was with my eldest son recently, and it was like having another brain glued on. He alerted me to so many things! A very simple thing, almost as we started: we were at the back of King's Cross and there was some of that galvanised railing – the really primitive and aggressive kind with the three-spiked top, the harshest kind of 'keep out'. And it had been parted by some means, accidentally on purpose. This revealed a piece of the structure behind, which is actually the site hoarding for building the tunnel for the train from Paris. So there's a parted space, and in that space one of these smart young kids had done a stencil of a running man. Now the

little running man couldn't fit in any of the regular gaps in the fence. I adore that stuff; that is at the edge of art, that little running man.

ML: You smiled then. You gave that little smile as you said 'that little running man'. That smile – it's recognition. You see something and you get that little chemical hit each time, don't you? What's remarkable is that when I see your photographs, I get exactly the same response. You're tapping into something that's at the core of every single person, and I think this is what's at the core of being human, the human condition. Because I know that every single person I've sent the photographs to – they all smile.

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ML: Can I ask you about the language? It's about the sculptures – they're just so different from the photographs. With the sculptures you've got this heavy top-down, or head-referenced, component where you relate the semantic to the perceptual, the verbal to the visual, which makes me feel sometimes I'm on a puzzle, and I'm trying to resolve it like a game. Sometimes, I'd look at the sculpture and I wouldn't look at the title, but of course as soon as I'd get one notion of what it is I'd look at the title. And sometimes I'd think, 'Oh yeah, I'm actually pretty close', and sometimes it would take me in a completely different direction. Sometimes they're so far apart, the jump, the journey that you've gone on between the semantic and the actual creation of the sculpture, the visual, is huge. And that journey sometimes for me is a leap too far, and I've ended up at a completely different place from the one that you have.

RW: Can I just say: they're absolutely not puzzles. I think they might borrow from the idea – I think you've taught me – that they might operate in this binary space, but I suppose my wish for them is that their potency would be in their ability to be imagistic. It's somehow like having grit in your shoe – it's amazing how long you can keep something in your shoe and keep accommodating it and moving it around. I think the way they get titles is closer to the way you might name a child. It might be a kind of rhyme with or echo from the piece, like onomatopoeia. You could say the title is a nomination. But also, I love the plasticity of language, which is dealt with brilliantly in *Blackadder* when Baldrick uses Dr Johnson's dictionary manuscript to light the fire and Rowan Atkinson says, 'Where is Dr Johnson's book?' and Baldrick goes 'Book?.... Oh, you mean the black and white papery thing? It's in the red, flamy, hot place!' And of course it is to do with, when you look up in a dictionary 'fire', it says, you know, 'conflagration'...

ML: Well, this is where words are all just approximations.

RW: Precisely. And we've had to develop points of agreement as to what we call things, what the approximations are pointing at. Sculpture can sidestep all this.

ML: Yes. And of course the way we view the world is very much culturally based. Like perspective: we learn perspective through straight lines in Western culture, whereas people that don't have straight lines don't learn perspective, or learn perspective in a different way. I interviewed John McCarthy after he'd been held hostage for so long.

RW: How soon after?

ML: It was several years, but what was interesting was, he told me a story that when he went into a field and saw two cows, he saw a big cow and a little cow. He didn't see a cow close to him and another cow far away; he'd lost the ability to see perspective. He'd been in this ten-foot-by-ten-foot square room, and because of that he didn't need to use perspective any more, so he'd lost the ability to see it. And then I remember a friend was telling me that when she was in the jungle, she first had to go and find these tiny little insects, beetle-like things, and for weeks and weeks she just couldn't see any; then eventually she clicked into that way of seeing, and suddenly she could see beetles everywhere. And I think this is what you've done. You've honed your visual system to pull out something that we all have a connection with – not simply from our own era, but actually a lot further back, from our evolutionary past. And I think this is what makes great art: someone who can see something that we all can relate to, that universally lights up the same area of our brain. That's what your photographs do for me.

RW: I want to hug you! But there's a punchline, a really lovely punchline, which is that Richard Gregory, when I had to interview him in Bristol, said, 'I take a lot of photographs myself, but there's really no comparison whatsoever, your photographs are marvellous, *marvellous*. But I want to ask you something.' Then he said, 'If I had some really nice frames made, and we went round the town together, we could lean them on things.' – the empty frames – 'Wouldn't that be the same thing?'. Well, it's a very beautiful, mad, late Surrealist image. But of course I wanted to say 'No of course it fucking wouldn't!' Because actually, the world *is* framed, it is *highly* framed, in our culture; there are lots of 'paintings' on the street, but they're called signs, posters, shop windows.

ML: I would disagree: I think he's right to suggest that putting the frame round things is very similar to what you do. Isn't he?

RW: Well, he's right and he's wrong. It's a lovely idea but it depends on who's doing the framing. Of course there are all those questions – scale, point of view, distance...

ML: ...and medium and fall of light. But can I just ask you one last thing about the sculptures, because I think the semantics are really important. Do your sculptures work without titles?

RW: Absolutely. In fact I rather object to the fact that I title them at all

ML: *Really?* I'm shocked that you would say that.

RW: I don't ever work from the title -

ML: No, I'm sure you don't. I'm sure that you work with a sculpture, on this journey that you go on, then you have this word that - I can't even imagine where it comes from, because I'm sure it's a different journey each time and you arrive at this word. But for me they would be completely different, those sculptures; you would look at them completely differently without their titles, they wouldn't be the same sculptures.

RW: What I mean is, I sort of resent my own education... The difference in me between the bit of me that is agrarian, the bit that actually perhaps feels like a Mediterranean person, and the bit of me that is a northern European rationalist, thoughtful, got quite a big vocabulary, is interested in etymology, no scholarly qualifications whatsoever but pretty damn nosy and looking stuff up all the time... I get nervous about the bit that is, if you like, 'educated', in relation to the bit which is almost like liking having my willy stroked. I love digging in the ground; I know the weight of things just by looking at them; I'd know the gauge of a piece of sheet metal, say, at a distance of thirty yards, and how much pressure it would take to bend it.

ML: You're an earthy guy, aren't you? Quite an earthy guy at the end of the day.

RW: Well, haptic, maybe. I need to be able to touch things. So those two things - the agrarian bit and the verbal, educated bit - are doing something. That's my own take on it.

ML: Isn't it interesting: for me the most intriguing thing is the tension between your evolutionary roots - whether out in the environment, the trees, the garden, the small efficiency that we have - and this education you've had superimposed on you. These are constantly coming into conflict. So you have these very wordy, semantic titles, which reflect your education; and then you've got this hands-on sculpture that you've built. And then you say, yes, you can take the title out and that's it! Of course, that's you, isn't it, that *is* one side of you. But then the other side of you *is* these rather provocative titles. When you actually know you, you can't have one without the other.

RW: No, I think that is true, and that is a little bit like, you can't ask for a cup of tea without using the words 'cup', 'of' and 'tea'; and it doesn't happen otherwise, unless you start pointing.

*Richard Wentworth and Mark Lythgoe wish to dedicate these discursive explorations to Professor Richard Gregory as a mark of their admiration.*