

“Managing creativity is sort of like managing chaos.”

Renowned choreographer Wayne McGregor speaks with Google executive Nikesh Arora about the alchemy of antagonistic forces in the creative process.

Wayne McGregor – one of the most innovative choreographers of our time, and **Nikesh Arora** – SVP and Chief Business Officer of Google, a company admired for its creative genius and utilized by hundreds of millions every day: **THE FOCUS** caught up with the two men at the studios of the San Francisco Ballet, where Wayne was rehearsing with dancers as a guest choreographer, and Nikesh was dropping by from Google’s campus in nearby Mountain View to say hello. Although they come from two very different worlds – the arts and business – the two quickly realized they share a fascination with harnessing creative impulses, as well as traversing the cutting edge of creative excellence.

Wayne McGregor: As someone who’s been toying with computers since I was young, it’s clear to me that the world of technology can be just as creative as the world of dance. I’m wondering how Google encourages such an amazing amount of creativity in an office environment?

Nikesh Arora: Well, you hire really smart people and try not to constrain them. And you definitely want to have different opinions around the table. These are not just gender issues or race issues or color issues – this is way beyond that. You have to create an environment that thrives on diversity of opinion. The last thing I want is a room full of people waiting for someone to give them the right answers. In many instances, there isn’t one right answer.

McGregor: Absolutely. In fact, one of the things that we try not to do is look for an answer right away, but rather try and identify interesting questions, and then see where they lead us.

Arora: I think in the creative process there has to be friction in the room. If there aren’t diverse opinions, you’ve got one big collective blind spot. You simply won’t get the best result if there is not enough opposition to an idea. That is why at Google we tell people: “Don’t hire everybody just like you, because you will not be able to appreciate other points of view.”

McGregor: I’ve also noticed that I always work the best with collaborators where there is a bit of tension – where there aren’t immediate sympathies, or where ideas take time to emerge. Diverse input is important to my work as well. I’m not just there to tell the dancers what to do, but to inspire something interesting from them that actually makes me think differently and changes the way in which I am creating a dance. The choreographic process is a fantastic example of distributed cognition – someone shares an idea; another takes an aspect of it and takes it in a different direction. You iterate it; it changes.

But it’s not just between the dancers. We typically work with a range of collaborators: scientists, composers, geographers,





RESUMÉ Wayne McGregor

Renowned choreographer Wayne McGregor founded his own modern dance company Random Dance in 1992, and was appointed Resident Choreographer of the Royal Ballet in 2006 – the first modern dance maker to be given that post. He is particularly acclaimed for incorporating new technology into his dance productions. McGregor has also directed operas, choreographed movies, and choreographed London's Big Dance 2012, which involved 1,000 dancers performing on Trafalgar Square. He has won many of the top awards in his profession, and in 2011 was appointed a Commander of the Order of the British Empire.

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or anthropologists. What I like to have in the room is a range of knowledge sets that actually change the way in which we think. This idea of knowledge transfer is really important.

Arora: As I see it, if we're open enough to be able to take lots of different inputs, put them together and see if we can come up with something cohesive, then we are definitely moving in the right direction.

McGregor: It's hard to know where the creative process is going to take you. I am a great believer in not getting rid of anything because you don't know whether or not it is going to be useful. Much later on something might become useful at the point where you are most blocked. But you don't know that initially, so I don't edit early on. But you just swim and forage in this sea of 'stuff,' with inputs from all sorts of people and places. At some point over a period of time a shape starts to emerge and you realize that this bit is useful for that bit.

Arora: That happens with us, too. Sometimes we will be working on an idea to address one objective and it doesn't end up delivering on the objective but it triggers three more ideas about something else that are equally as important. We've also found that "failed" ambitious projects often yield other dividends. As you say, you never know where the creative process is going to take you.

McGregor: I think the trick is that there also has to be some kind of driver, there has to be some way to facilitate an idea. Once an idea is targeted, what do you do with it? You have to help it emerge, flourish and then push it even further.

Arora: I find that it's a fine balance between structure and creativity. To manage creativity, you have to make sure that there is light-touch management, where people can actually come up with their own ideas and debate them effectively. If you try and impose too much structure, people lose their creativity. On the flipside, you don't want too much debate, because you also need some execution. The individual needs to decide when to be extremely creative and when to be pragmatic to get something done.

McGregor: For me, it comes down to a sense of play within the team. If you are in a safe space where experimentation is the expectation, then you are going to take risks. You are going to fail a lot of the time; you are going to end up on the floor falling over one another laughing. But it builds a kind

of intellectual equity, a fantastic collegial way of responding. I think this play, which is a form of misbehaving, if you will, is important because what we are really trying to do is to constantly challenge and stimulate ourselves to work outside of our habits. To recognize them and find strategies to move away from them.

Arora: I think of managing creativity as sort of like managing chaos. What we've found is that the key ingredient you need to manage chaos is very smart people, because smart, creative people generate a lot of ideas. And once you have those people, the challenge is to keep them excited and passionate about what they do. There always has to be that element of the interesting and the new for them.

McGregor: Attracting curious and creative people is certainly a key ingredient. But I find that you don't have to find them; they tend to find you. Ideas have pull. Even with dancers in large opera house organizations, it is often the most curious that actually seek you out. It is not about persuading them, it is about trying to harness the ones that come to you. If I work at Covent Garden or the Bolshoi, they are already there!

Arora: People who have intellectual curiosity have usually excelled in what they've been doing, because people who are constantly curious approach things differently. Coupled with that, we also look for people who have chosen a path in life and pursued it to the exclusion of other things. That is that balance between creativity and delivery on a team. One of our applicants was an Olympic figure skater, and we ended up hiring him because of that. To be an Olympic figure skater he had to be the very best. And so, he had to make a lot of sacrifices; he had to decide not to go out drinking but rather wake up every morning at 4 o'clock and practice for three hours before he went to school. That tells us that he is an achiever in life; that he will get something done.

Now, the question is, can you put someone like that in an environment where, as you say, they are encouraged to play, they are encouraged to be creative. Where failure is not penalized, failure is an option. At the same time, immense creativity provides you with a great platform from which you can go out and make a difference.

McGregor: I already expect the best dancers in the world to walk through the door, so what I am looking for in a dancer is the added extra. It will have something to do with their interesting journey before they got to me. Choreography is also 80 percent psychology. It is partly about managing the room to get the best out of people. I find that I am very sensitive to the energies held within spaces and good at changing the dynamic of the room, reframing and refocusing whatever energy there is to capitalize and exploit it creatively.

But at Google, where you have this fantastically creative environment, where so many things are percolating, how do you take ideas forward?

Arora: Ideas that make it at Google do so in a sort of Darwinian manner. A good idea attracts more people who want to work on it, then more people get excited about it, and then more and more of a critical mass just develops around it. As good ideas rise to the top they get more and more funding, and more and more support. I have to say that I'm curious about how you incorporate digital technology into your work, because you are quite well known for this.

McGregor: Yes, digital technologies have been very much a part of my whole life. But when I am thinking about making pieces, I am not thinking about technology in terms of stage technologies like laser projectors, sensors or 3-D film. Rather, I am interested in how to apply technology and technological thinking as an intervention in the creative process itself. How do you work with new brain science for example, to give you different ways of understanding creativity? How do you actually work with digital technology to perturb your decision-making process? How can you use digital technologies to remove certain filters that usually shape the way in which you see the world? This is something that I find very exciting in terms of what it then challenges the body to do. Choreography is then a process of physical thinking.

Arora: So how do you translate that into the way you work with your dancers?

McGregor: Well, one example is our Choreographic Language Agent. For the past ten years we have been working with neuroscientists and cognitive scientists to discover and map aspects of kinesthetic intelligence. We know that dancers think with their bodies; in fact we all think with our bodies all of the time, but dancers and choreographers have added knowledge. By identifying this knowledge and building an autonomous software agent (CLA) that thinks physically, we have been able to bring a new technological platform directly into the studio that we can collaborate with. So, let's say I set a dancer a problem, whatever that problem might be, such as working with backspace, we can address it also with our Choreographic Language Agent. The CLA solves the problem in its own terms, the dancers in theirs; most often the dancer and computer decisions are interwoven seamlessly in real time. There is a sense in which this is a 4-D mirror offering us points of view that we wouldn't have unearthed otherwise.

Another example is the work we have been doing in San Diego with capturing the complete choreographic process, particularly the decision-making process, live and in real time. I'll make a piece in laboratory conditions, and have it captured by ten cameras, and then cognitive scientists will analyze each decision in that process and offer insight about the creative evolution of the piece. What is interesting to me about that, is the fresh insight it provides on why you did what you did, highlighting many process tendencies that you were not aware of and offering new directions. You do this not

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from a creative point of view but a cognitive point of view. We talk about creativity being intuitive, but we also know that the brain makes meaning from things; that's its job. So when we think we are being intuitive, probably we are not. With our approach we can get to a point which is actually below the surface of making something – that dissects it and understands it in a novel way and allows us to shift our attention and perspectives mindfully. So we can start to identify our personal thinking habits and either use them or abuse them to mine open creative territory.

Arora: It sounds like this technology has a great impact on your creative process.

McGregor: Well, the creative process is certainly different, and that is what is exciting about being creative: you can't predict what the creative process is. I think it is very important to have a range of possibilities. I find that fascinating. So, for me, technology is about learning.

Arora: Technology really is a phenomenal enabler. What has happened is that the friction of collecting information, the friction of iterating, and the friction of distributing has gone down so much that your ability to be creative is enhanced, because the time zones and time frames are compressed. I can create something today and get two billion people in the world to try it in real time. You could create a ballet, and I could enable people all over the world to watch it together. For that to happen in the past, you would have had to go to every city in the world and perform.

McGregor: That is one aspect of technology that's great. But it's more than just a dissemination mechanism that broadcasts performance. For us, what has been more interesting is the ability to exchange feedback. Through the Internet, I can actually work with a young dancer in Africa who is working in a different cultural context to me. This exchange is something that is very rich.

Arora: New technology has really broadened the ability to include more voices and have a greater exchange of ideas and opinions in the creative process. With broadcast media – television and radio – you stand up in front of audiences and perform. There's no real interaction. The same is true in the commercial world when it comes to launching brands. It has traditionally been a broadcast medium. You launch a brand;

A close-up portrait of Nikesh Arora, a man with dark hair and a slight smile, looking off to the side. He is wearing a dark suit jacket over a light blue shirt.

RESUMÉ Nikesh Arora

Nikesh Arora is Chief Business Officer and a Senior Vice President of Google, Inc. He previously served as the company's President of Europe, Middle East, and Africa Operations, where he grew operations from ten offices and 500 employees to 28 offices and more than 2,500 employees in less than three years. He serves as a member of the board of directors of Colgate-Palmolive and Bharti Airtel.



people go and consume it. The biggest challenge has always been getting feedback. But interactive technology is making feedback frictionless. You can launch a product in the morning, by the evening a million people have tested it, tried it, and they can actually give you a current opinion. For the first time you have an interactive medium, and you can harness it and take the benefits of it in various parts of any process.

McGregor: That is one of the brilliant things – you definitely have a whole range of feedback you didn't get before, whereas you used to get this very concentrated audience. You got the critical response, the expert response. But now, I get a much fatter dialogue, whether that is people hitting my Facebook page or people tweeting or whatever it is. The range and type of feedback are extensive.

Arora: That is another element of it. In the past we relied on a world of experts, where a few people knew something really well. That's changing. It has become so easy for people to interact with each other to exchange information. I can send you a message, you can send one back; I can put something on a website, you can make a comment; I can go out there and collect a million opinions this morning and discover what people think about some proposition or other. That ability for us to be interactive with people allows us to collect a lot of input. And sometimes the collective wisdom of the crowd leads to a better answer than individual experts.

McGregor: I like moving the crowd to somewhere they haven't been before. I want to be on this precipice and not feeling very safe. I want people not to always understand. I want people to be provoked and angry or annoyed or irritated about aspects of the performance. These are some of the ways in which I think you grow.

Arora: The hardest thing I find personally and professionally is to get people out of their comfort zone, which is what it sounds like you are trying to do. At some point in life, whether it is growing up professionally or personally, our risk aversion changes. I think the solution is that we have to encourage people to live outside their comfort zone.

McGregor: Yes, exactly. That's what I've tried to do at places like the Royal Ballet – to facilitate a realignment of the machine, to be a kind of provocateur, to help change the way of thinking. For us it was very difficult in the ballet

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world to change the audience's perception of what they think they should be seeing. It was important to help get them to reframe the way in which they experienced ballet and to encourage an intellectual as well as visceral encounter at Covent Garden.

Arora: I always tell people that if you aren't learning something every day, then you are stagnating. Learning requires you to go and explore different things in your world, go out and look at things from a different perspective. But then again, I'm impatient by nature. I don't like being comfortable. I think I must be on my fifth career change. And every time, every change was like drinking from a fire hose.

McGregor: Well, impatience as an attribute speaks to me very much as well. I came to ballet in quite a promiscuous way, if you like. I wasn't trained in ballet, which is very unusual in this world. I started in ballroom and Latin American dance. I loved John Travolta as a child, and I came through that way. I didn't start making ballets until about ten years ago, and now I am lucky enough to have one of the best ballet jobs in the world. The most important thing for me is, like you said, working in very different fields. I work in ballet, but I also work in movies. This is what excites me. How can I use my skills as a choreographer to work in totally different applications and in totally different ways?

Arora: I've always found that I prefer people who are ten percent unsure, ten percent not knowing what's going to happen when they walk on stage. The rush they get when they are trying to get something done, when they are not quite sure how they are going to pull it off is what's special. They have such tremendous amounts of confidence and passion and curiosity that they are sure to do their best work. Those people perform way better than people who have always done it before and feel comfortable – the ones who are just not outside their comfort zone.

McGregor: Yes, totally. I build managed chaos into my pieces. I can have improvised sections where somebody is able to be on this precipice, where they are able to deliver – in a way that they can't in any other circumstances – while 3,000 people are watching them. It's like jazz. What I'm trying to do is find discoveries during that very intense time of improvisation on stage, in front of thousands of people.