

## **Slide 1**

Good morning. CAN YOU HEAR ME at the back?

At this hour of a Sunday morning, I think I may say Welcome back to Consciousness!

Now, to develop a complete account of Consciousness in half an hour should be a doddle. But what I mean to do is to address specific elements of the Chalmers problem as printed in the programme.

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First – he deals only with one aspect of conscious activity; broadly *qualia*

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In response I shall emphasise the limited and contingent role of this qualitative experience

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Second – he characterizes this as not physical and as subjective

## **Slide 5**

I shall present it as physical and as objective

## **Slide 6**

Third – he finds it ‘objectively unreasonable’

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I shall argue that it makes good evolutionary sense.

So first, how important are qualia?

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They belong particularly to one form of conscious activity, that of sensory perception. Most of the things we do consciously do not seem to involve qualia at all. For example, extracting information, planning, problem-solving, making or doing something, communicating. These are all things I only do in Conscious mode – but none of these seems to involve a special what-it-is like *feeling*. Nor does remembering, unless what is remembered is itself a sensory perception. Is this what Chalmers means by ‘entertaining a mental image’?

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Chalmers also includes *emotions* among these ineffable experiences. They do not seem to be of the same sort as perceptory qualia. Vision is the final stage of a sensory process. It is what eventually happens when light hits our waking eyes. But anger is

not in the same way a feeling that is the result of being angry. It *is* being angry. There is no difference between sadness and feeling sad.

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We are indeed *conscious* of our emotions when they are strong. But as they become fainter, do they not become less distinctive, less what Chalmers characterises as something that it is *like* to feel?

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I have a cousin to whom I am not very close, and I hear that her husband, whom I've never met, has cancer. I am not lying when I say that I am sorry to hear it, but does this really amount to a feeling? It is an attitude, a disposition to ameliorate or comfort, but it is far from feeling sad.

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As Dr Johnson said: "Why, there's Baretti, who is to be tried for his life to-morrow, friends have risen up for him on every side; yet if he should be hanged, none of them will eat a slice of plum-pudding the less. Sir, that sympathetick feeling goes a very little way in depressing the mind."

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Altogether then I am inclined to regard the sort of emotion that one is conscious of as almost an interruption, an invasion of consciousness, rather than itself a conscious process. At any rate, it does not seem in the least bit puzzling to 'explain' it in physical terms. We don't scan for neural clusters and pathways – we look for great surges of chemicals washing over the whole system. And we find them. Adrenaline or alcohol. Cortisone or cocaine.

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So I am going to confine Chalmers' problem pretty much entirely to sensory perception. The way I put it is that visual experience is how we *register* light waves; sound is how we *register* air waves; touch is how we *register* physical contact; taste and smell are how we *register* chemicals.

Now a great deal is sometimes made of the fact that I cannot tell whether you register 'red' the same way as I do. Of course there is every reason to suppose that you do. But it may matter less *how* we register, than *that* we register, ie recognise and identify. Does it *matter* if I register these light waves the same way you do?

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My mobile ring tone may be different from yours. So what? as long as each of us recognises our own and can tell it apart from the landline or the door bell or the fire alarm.

So, for me qualia play a contingent role in a very small region of our conscious activity.

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Qualia are experiences that we obviously share with many other animals, including insects, reptiles and birds. Just check out the role of sight and sound in mating behaviour. Not to mention scent and touch.

So qualia are indeed a long standing feature of animal life, but they play little or no part in the many conscious activities by which humans seem distinctive.

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I can't see them as a central problem of human Consciousness.

[*end of Part 1 9 minutes*]

### **Slide 18**

Now let me discuss Chalmers claim that qualitative experience is somehow not physical, and that it is innerly subjective.

First – If vision or sound are *not* physical, then what are they? In 2017 Chalmers wrote a whole paper, 'Naturalistic Dualism' claiming that Consciousness belonged to – or constituted – some sort of 'fundamental' – parallel to matter but different. Now this claim should face the standard arguments against dualism. First, just what kind of entity is involved, what does it consist of, how do we observe it? And, in particular, how does it operate, how interact with physical matter. But Chalmers seems hardly to acknowledge these questions, and certainly he comes up with no answers.

Anyhow, it seems unnecessary. Why is not perception an entirely physical process?

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Take vision. It is an activity because it is not merely passive: it involves *interaction*, interrogation, prediction, and filling in. It is an activity common to a great many sorts of animal. The visual perception itself appears to be just the last stage in a physical process which we can observe and check. Yes, check – at least with humans – by asking. I cannot ask birds directly but can anyone doubt from their behaviour that they see the coloured world pretty much as we do. And we can also confirm the correlation of specific visual experiences with the activity of particular neural networks.

All these points apply to our other senses. And this brings in a really striking point about Qualia. So far from being part of that subjective *inner* life that Chalmers evokes, they are robustly and reliably *objective*.

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You look at a first class postage stamp in ordinary light, and unless you are clinically colour blind, you see red. I look at it – same thing. Thousands look at it – same thing.

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So standard an effect that we can use it to organise traffic.

Now earlier I suggested that it hardly mattered greatly whether you and I experienced red in the same way, so long as we recognised it as red.

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But listen to two critics discussing a picture. Can you really suppose that they are working from mutually inaccessible palettes of colour?

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what about two wine tasters - Do you really imagine that they are working from mutually inaccessible regions of taste and smell?

After all we are the same species, we draw on the same gene pool, we'd expect to work the same way.

Of course our perception of 'redness' will vary with the lighting; and with the other colours against which it appears. But these variations too are consistent, and predictable – as you would expect from a physical process.

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An interesting limiting case here is synaesthesia. People with synaesthesia see numbers or words or letters as coloured, they may even 'see' sounds as coloured, though they hear them too. But there is a contrast to the objectivity of normal vision. Two synaesthetists are not likely to agree on the colour of the number 8 or of a blast of B flat on the trumpets. So we may regard synaesthesia as a sensory aberration, like colour blindness; and not as a sensory enhancement like perfect pitch.

But beyond colour blindness and short of synaesthesia, what we think of as normal vision seems pretty objective. Indeed, our very standards of scientific verification depend 100% on this robust objectivity of human experience.

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Two observers will agree that in given circumstances, the thermometer is indeed registering 20.1 degrees Celsius.

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So will twenty. So will 200, but excuse me the slide.

If we didn't trust the objectivity of human perception, science would be at a stop.

If then sensory perception is, from beginning to end, a physical process, it follows that the right way to address it is by standard physical investigation. Chalmers himself is not happy with this. He wants to analyse the concept of Consciousness, and to discuss the Content of Experience. As well have philosophers discuss the concept of Digestion or the content of excret . . . No, no. Adopt operational terms, observe, devise experiments.

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Certainly the attempts to explain consciousness or conscious activity by philosophic analysis have not been very productive. In fact, two and half thousand years of philosophy have given us hardly any useful results at all. Neuro-science is very recent – only 70 years ago Ryle could write *The Concept of Mind* without mentioning neurons or brain imaging. But look at what we know today – all by virtue of standard scientific methodology plus new technology.

[*end of Part 2 17 minutes*]

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Now I turn to Chalmers puzzlement – *why* qualia? Note the apparent self-contradiction in his own formulation *It seems objectively unreasonable*. Because 'seeming unreasonable' is hardly objective. It is pretty subjective. Just what are Chalmers' criteria.? Many of us reckon that Prime Minister Johnson and President Trump are weirder than most science fiction.

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The highly intelligent life forms of Alpha Centauri can hardly restrain their incredulity when shown pictures of homo sapiens. Life forms themselves are 'unreasonable' in Chalmers terms – they are not anyway entailed by the apparent nature of the universe.

So it is the explanation of qualia as a feature of living organisms that I propose to deal with now. And in doing so, I shall introduce a more general explanation of conscious processes.

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Now we are used as philosophers to distinguish Why – How come? from Why – What for? But we may also be used to being reminded by people like Dennett that in evolution the two questions have the same answer.

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That is to say, a new feature which arises by chance in a life form will be perpetuated if it does serve some purpose. How come? is not *driven* by intention, by What for? – but it is *preserved* by being For something and something useful, something that promotes reproductive success.

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So, reproductive success. All organisms coordinate their own activities to interact with their environment. They seek and exploit what they need to flourish. They avoid or cope with threats to their survival. And to accomplish this, evolution has built up vast arrays of interactive algorithms that work, and work well, without ever the organism being *conscious* of them.

Plants of course are an outstanding example – nothing whatever suggests that there is anything that it is like for a plant to be a plant. You may consider the lilies of the field, but I am pretty sure they don't. And animals too benefit from instinct, including us. Our neural system deals continuously with the vital business of breathing and circulating blood, of digesting, of maintaining cells. It runs complex co-ordination, for example of our bodily posture when we walk or sit down. So none of this need we attend to. The neural algorithms are there to do them. Indeed if there is a truly *inner* life, it is surely all that goes on that we are *not* conscious of: the *unseen* workings of 30 odd trillion cells, including 86 billion neurons.

The algorithms are there because of our evolution, ie because they have made for relatively successful reproduction. But in order to qualify in this inheritance process, the situations dealt with must be *repetitive*.

Now my thesis is that our Conscious mode is a way of dealing with the One-Off.

And my account relies on two features which distinguish *all* our conscious activities, including Perception.

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Those two features are:

- (1) That the conscious activity is selective: it focuses narrowly on one object at a time. And indeed it is not only selective, but appears to be selected, chosen by us. Attention is singleminded

- (2) That the conscious activity deals with a highly edited version of that chosen object.

So how do these features mark our sensory perception. Take vision.

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Of many things in our visual space we consciously attend to only a very small part at any time. Not only that, but we can and do shift that narrow focus, apparently on purpose. If you see the wood, you do not see a tree. If you see a tree, you do not see the wood. And if you look at a leaf, you hardly see the branch. The same goes for sound. You will have come across what is called the Cocktail Effect – the ability to concentrate on what one person is saying amidst a loud buzz of people taking all around. And this too seems tunable: you may cut out your immediate neighbour because you really want to listen *to* what the person at the next table is saying.

The other feature of a sensory experience is that it is not a complete and accurate representation of its cause. It is best regarded as an edited version: that is aspects of the cause are selected, organised, and shaped and formatted.

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That is easiest to follow in vision. One saccade or glance may take 20 milliseconds. In that time, some 30 million photons will be reflected to your eyes from each tiny surface in your focus. All that information is processed, selected, organised and presented in one simple version – a version that is intelligible. And a version that enables me to pick this particular bunch or to check it for disease.

When we hear a noise, the sound waves vibrate 10 times to the second. Is that what we hear? Rather we seem to hear sounds that are continuous until they change in pitch or tone.

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If I feel an itch, I may be able to locate it consciously to 3 or 4 square millimetres of skin – ie to some 3 or 4 million cells! But that means I can deal with it by an equally simplified action. Scratch it! Yes, an action to be carried out by millions of nerves operating millions of cells – but in conscious executive mode, one top-down order.

Selective focus on simplified version enables purposeful action in real time.

The same features give us the usefulness of other conscious activities. Take finding information from a printed source. First there is indeed a perception process. That is so much taken for granted that we award a special title to those who remember the actual appearance of the printed page. Photographic memory

But then consider how much information there is in any sentence.

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take this sequence of precisely one hundred characters and using only the english alphabet and space

### **Slide 38**

Now if you count only the English alphabet and spaces, and ignoring Upper case and punctuation, you have 27 options for each character. So there are 27 to the power of 100 unique sentences of this length, and this is just one of them.

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Count them! And in conscious mode, just how long does it take us to *focus* on the *relevant* and get information in the human sense – what makes a difference for our *purpose*. Hardly a second. But for that time, it had your attention.

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Or perhaps I am trying to choose a present for my sister. This could occupy my conscious mind, almost exclusively, for ten minutes.

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Once it has my attention, think how many items I could work through, just on Amazon.

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But my conscious mind Simplifies the options to a manageable few and concentrates on only the *relevant* factors of each. In all Conscious activity then we have these two features.

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Thus Dennett's analogy: Consciousness is like a User Interface. Focus on one thing and presentation of that one thing in an edited version. Something we can grasp and respond to in real time.

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By attention and simplification in Conscious mode, we escape from the repetitive patterns developed from evolution. We deal with new situations, we find new ways to tackle old ones. Of course this may not be the only way. Evolution doesn't guarantee that. It may not be the best way. Evolution doesn't guarantee that either. But it has been a highly effective way: it has made us the most adaptable and inventive of all creatures.

Which supplies a pretty good explanation of *Why* we have this remarkable mode of operation, qualia and all. It is indeed a marvel. But it's not a mystery.

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