The use of colour and its effect: the how and the why*

EG: Bridget Riley, I would like to start by asking you your views on Constable’s pronouncement that painting is a science and should be pursued as an enquiry into the laws of nature. Constable continues that pictures may be regarded as experiments in that science. What is your attitude to this idea?

BR: I have always loved Constable, but I can’t quite agree that painting is a science, or at least not what I understand by science. Nor do I think that his paintings are experiments. He was working at the end of a great tradition when painting had become stale, tasteful and ‘historical’. Artists were imitating, quite blindly, ‘the look of art’, making paintings which looked like earlier great works but which didn’t spring from original feeling or insight. In that sort of context studying atmospheric phenomena, knowing exactly what gave rise to the formation of a particular cloud, for instance, set him free to respond in a fresh way to nature instead of simply exploiting what turned up in the way of paint blottches.

EG: But surely it is observation he also had in mind? At that time observation was considered to be the key to a natural science, but I believe you have also said that in your own work it is not a theory of optics that interests you, but the appearance of things, and therefore the behaviour of light as you can observe it, rather than the optical reasons for the behaviour of light.

BR: That is true, my work has grown out of my own experiences of looking, and also out of the work that I have seen in the museums and in galleries, so I have seen other artists seeing, and that has been an enormous help to me and a kind of pattern maker, in that it has shown me how a formal structure of looking is shaped and can shape in turn the way that one proceeds with one’s own work.

EG: So you prefer to look at pictures rather than to read books on optics?

BR: Yes, I do.

EG: I’m glad to hear that. And for that reason I suppose in your own work, you have always concentrated on particular problems which interested you, visual problems, rather than scientific problems, which you try to work out in exemplifications, as it were, by relatively controlled and clear juxtapositions of shapes at first, and colours later in your work, which have sometimes a very surprising effect, that you could not have predicted from the pure physics of the behaviour of light. Would you agree there?

BR: I haven’t studied the pure physics of the behaviour of light, but in the early 1960s I realised that the most exciting way of setting about work was to establish limits, in terms of each particular piece, which would sometimes push me and the work as we evolved together into such tight corners that they yielded surprising riches. It was like a forcing house: through limiting oneself, even severely, one discovers things that one would never have dreamt of.

EG: I’m sure that it’s so. But that of course has a parallel in science, and in a way also in our world of art, that the artist cannot roam all over the place, he must ‘concentrate’. That is perhaps the simplest word. In your catalogue you quote a beautiful passage from Stravinsky about it. Would you like to read it to us?

BR: It’s from one of the six lectures on the making of music that Stravinsky gave at Harvard in the winter of 1939–40. They were published in a book called The Poetics of Music, which, along with Paul Klee’s Thinking Eye, became one of my ‘bibles’ in the 1960s, and this particular paragraph struck a very powerful chord: ‘My freedom thus consists in my moving about within the narrow frame that I have assigned myself for each one of my undertakings. I shall go even further: my freedom will be so much the greater and more meaningful the more narrowly I limit my field of action and the more I surround myself with obstacles. Whatever diminishes constraint diminishes strength. The more constraints one imposes, the more one frees oneself of the chains that shackle the spirit.’ I think that’s a very beautiful piece, and it became a guiding principle.

EG: I found it immensely illuminating, that in connexion with this problem of self-limitation, you write or say ‘if the modern artist is no longer subject to external restrictions, then this simply means that he has this freedom to set himself limitations, to invent, so to speak, his own sonnet form’.

I think that is a very beautiful and illuminating comparison, and it made me think of what Goethe said about the sonnet, which, as you indicate in your quotation, is of course also restricted to fourteen lines and a fixed rhyme scheme. I cannot translate Goethe’s sonnet about a sonnet in rhyme, but I’ve tried to make it at least scan. These are the concluding lines:

This is the way with all types of creation:
It is in vain that an unbridled spirit
Will try to reach the summit of perfection.
Self-discipline alone can lead to greatness.
Accepting limits will reveal the master,
And nothing but the law can give us freedom.

I believe that you must have experienced this freedom within the law in your creations which parallel the trying to write a sonnet.

BR: Yes, I have. Those marvellous moments of freedom

*This text is an edited version of a conversation between Bridget Riley and Sir Ernst Gombrich, the second of five interviews with the painter produced by Judith Bumpus and broadcast on BBC Radio 3 in connexion with Bridget Riley’s exhibition According to Sensation. Paintings 1982–1992, held at the Hayward

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are the rewards, they are amongst the pleasures for which one works.

EG: Do you think that you can predict these moments, or do they come unbidden, as a grace, as it were?

BR: They come unbidden. I find that if they become . . .

EG: Predictable?

BR: Yes, predictable, then they lose their bite, they lose their vitality.

EG: Lose their bite for you?

BR: Exactly. Then I can't go on in that particular vein because the contact with what I am doing, the feeling of life, comes in part out of being surprised.

EG: I see. It is the medium which gives you surprise?

BR: Indeed it's the medium that surprises. One of the most wonderful things about painting is that its resources are inexhaustible.

EG: It is the dialogue with the medium, if you like, I think you also said that somewhere. I'm sure that it's very, very important.

BR: Yes, until you get this dialogue going, you're getting nowhere.

EG: You cannot simply lie in your bed and imagine what you will want to paint?

BR: That's impossible!

EG: It will turn out differently?

BR: You cannot plan like that.

EG: No.

BR: But that, of course, is one of the most exasperating things about making a painting, because although one longs to use one's intellect as such, one finds that one cannot do so in the way one normally does. What is in that way viable turns out to be beside the point. It seems to be less a question of successive thinking than an instantaneous response.

EG: You must remain open to what the medium wants?

BR: Yes, and one will need all one's experience and flexibility to field it.

EG: I'm sure it's a little similar to the chess-player who knows all the openings by heart, but gradually it becomes unpredictable what is going to happen, otherwise it wouldn't be a game at all?

BR: That's a good comparison.

EG: The reason, I suppose, is that particularly as soon as you work with colours, the mutual effect of colours are indeed almost unpredictable because there are so many variables involved. We all know that if you put two colours side by side, the contrast may enhance them, or there may be what has been called the spreading effect, they may spread into each other visually, and therefore change in the other direction. I'm sure that in your work you must experience this all the time, and be both delighted and sometimes perhaps disappointed by this mutual effect of colour.

BR: Yes, that is true, very much so, but it is also true of black and white. In my earlier work during the 1960s I found that they, along with greys, behave in a way somehow similar to colours, that is to say activities such as contrast, irradiation and interaction were taking place there too. I think that painters have known this for a very long time — there are a myriad sensations and one has to pick one's way through. There is a story of Delacroix running into Charles Blanc one night and explaining to him the secret of colour painting. He points at the muddy pavement saying 'if someone asked Veronese to paint a fair haired woman with those colours, he would do just that and what a beautiful blond he would make on his canvas!'

EG: Wonderful, this is absolutely true, and in a way we may also describe it as scientifically correct. Even so, I am convinced that John Ruskin was also right, when he said that there are no rules by which you can predict these effects. If I may quote him at some length:

While form is absolute . . . colour is wholly relative. Every hue throughout your work is altered by every touch that you add in other places . . . In all the best arrangements of colour, the delight occasioned by their mode of succession is entirely inexplicable. Nor can it be reasoned about. We like it, just as we like an air in music, but cannot reason any refractory person into liking it if they do not. And yet there's distinctly a right and a wrong in it, and a good taste and a bad taste respecting it, as also in music.

BR: He's absolutely right. It's interesting that he makes this comparison with music. The common ground between music and painting seems to lie in the organisation of their abstract qualities. In music it's very clear, such things as the accumulation of sound, the dispersal of sound, the ebb and flow, the rise and fall, the contrasts and harmonies are arranged according to certain principles. In picture-making the masses, the open and closed spaces, the lines, tones and colours can be organised in a parallel way. It's as though these relationships are built up in all their complexity in order to provide a vehicle for those things which cannot be objectively identified but which can nevertheless be expressed in this way. Music articulates this indefinable content and it seems to me that this also applies to abstract painting, or at least the strongest of it.

EG: You have talked about a cycle of repose, disturbance, and repose, and surely this is, at least in Western music, in our diatonic system, the basis of all music, the possibility of a resolution of a discordant sound in the cadence and so on. And I'm sure that here too, we have of course a scientific background in acoustics, as colour has a scientific background in optics, but acoustics alone have been shown not to work if you really want to analyse music, because in acoustic, what is called even temperament has no place. That is to say the scales of our piano are not tuned exactly

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4 J. Ruskin: The Elements of Drawing, London [1857], Letter III, Section 153 and footnote to Section 240.
according to the laws of acoustics.

BR: That's splendid – that's exactly the point. Simple regular symmetrical thinking does not take sufficient account of the imaginative relations and balances. Without that input, which 'beds in' sensation, one can't listen, interpret or look with any real precision and certainty.

EG: Apparently our mind has many more dimensions or variables, or whatever you call it, than you would have been able to predict from the study of the physical correlates which form our sensations. It seems that in the last thirty years or so we have really moved away, or scientists have moved away very much, from the theories of vision which were accepted as gospel truth, and which we even have learnt at school, which place all the sensations in the retina and think that by explaining what happens in the retina we can explain how we see. This is obviously no longer a fact, that is to say, it never was a fact. The discoverer of the Polaroid Camera, Edwin Land, showed in a number of experiments that the most surprising colour phenomena can be produced by using only two colours, something very similar to what Delacroix mentioned in the anecdote you told. And more recently neurologists, particularly Margaret Livingstone in Harvard, have probed the brain with electrodes and made unpleasant experiments made on monkeys and have really found that there are centres in the brain which respond only to colour, others only to shape, others only to movement and these various systems interact in the most surprising and bewildering way, so that what another student of vision, J.J. Gibson at Cornell, called 'the awe-inspiring complexity of vision' has by now become a scientific fact.5

BR: I think your account of those experiments just makes the precedence of Delacroix's observation so much more poignant. This probably dates back to his visit to North Africa. He noticed several interesting things happening in the appearance of objects. What his discoveries amount to is that taking a white cloth in sunlight, for instance, he saw there a violet shadow and a fugitive green – but it also seemed to him that he saw more colours than just those two: was there not an orange there as well? Because, he argued, in the elusive green he found the yellow and in the violet the red. Delacroix was convinced that there were always three colours preceptually present in what we see, and he found more evidence in various other observations he made and concluded that the continual presence of three colours could be regarded as a 'law' in the perception of colour.6

EG: Have you had similar experiences to the one of Delacroix in looking at a white piece of linen or any other such objects in the sunlight?

BR: I have never re-run that purely as an experiment, but the second colour painting I made in 1967 – Chant 2 – is all about this. I did not know anything of Delacroix's discoveries at the time, but as I worked on my studies I could see that something was beginning to happen, and I built the painting to articulate this visual energy as I called it then. I saw this as an instance of the innate character of colour when set free from any sort of task describing or depicting things. In nature this sort of thing happens more or less clearly quite often. In the Mediterranean landscape there is a quite common example that anyone can observe. If in the field of vision there should be a fair amount of ochre ground or rocks of an orange or an orange red, and maybe some strong green vegetation or turquoise green in the shallows of the sea, one will then see violets particularly along any edges where the oranges and greens are seen one against the other. In Cornwall a few years ago I remember a spectacular instance; looking at the sea coming in over little rocks – which was basically a few greens and a great many blue violets produced by various reflections – there was also – and this is important – quite a lot of dull orange brown in the seaweed floating in the water. As a result the whole surface of the water was flecked with tiny fugitive crimson points. It seems that as sight is always in action – is working all the time – whatever one looks at one cannot help but look through one's own sight.

EG: Of course.

BR: I have found that as a painter you develop a kind of screen or veil between you and external reality which is made up of your own practice or habits of seeing. Monet's 'enveloppé' and Cézanne's 'harmonie générale' are actually such fabrics or veils by means of which their perception is so heightened that they can penetrate further and with greater precision than they could without it.

EG: And in addition of course, as you said, it is the scale of the patches or strokes of colour, which change the behaviour of colour in our perception, and therefore when you step too far away and they become too small for the interaction to have the same effect you aimed at, you may really see grey. Was that what happened?

BR: Artists have usually held this very subtle question of distance and the perception of their work in their minds when they are making something. For instance, in Tiepolo's ceiling paintings in Würzburg, the blues over yellows, the reds over greens, the brush marks which cancel out, or even destroy, the purity of those colours, makes instead a beautiful, luminous, fresh grey which is what one sees from the floor, which I'm sure was his intention. An artist does know – should know – the effect of distance, it's part of his work to understand those things.

EG: How far do you take this into account? Have you any particular ideal distance at which you would like to see your colour compositions viewed?

BR: No, each painting is specific and its viewing distance is equally specific. But I have noticed in my own work and in other painters' that if an artist is working by response then the distance from which the work has been seen in the making, in the studio or wherever, is usually the one which perceptive spectators will instinctively take up on their own accord later on.

EG: Thank you, Bridget Riley, for having told us such illuminating facts about your work and your experience.

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