

Pictorial composition and emotional response

by David Freedberg

<http://www.interdisciplines.org/artcog/papers/3>

▼ Modes, Innateness, and Arousal

Dominic Lopes

Dec 2, 2002 22:30 UT

There is much in Freedberg's description of his work that I think is bang on. Maybe it's a bit of an exaggeration to say that "all this is likely to arouse deep scepticism." But there are a couple of points where I think Freedberg might proceed with caution.

He writes that "I think that anyone who reflects on these questions will realize instantly that a positive answer would entail a view of the relations between pictures and spectators that is not solely dependent on context, but is predicated instead on the possibility of being able to establish certain kinds of rules; and that certain kinds of responses are in fact innate." I don't think the entailment is so obvious, however. I do think it's obvious that pictures can directly arouse their viewers' emotions and that there are rules describing the relationship between how a picture looks and the emotions it arouses. But it does not follow as a matter of logic that the rules are either innate or universal (and universal does not entail innate). Freedberg's example of musical keys gives the mistake away. C-Major is not universally gay and warlike; that is a convention of European classical music and it must be learned. I think it is enough if the modes in the pictorial case, like musical keys, turn out to be systematic and rule-governed.

I also wonder whether it's safe to cast the question as one about emotional arousal, rather than expression, where expression does not require arousal but merely the recognition of something like an emotion-expressive look. It may well be that E-flat Major is perceived by many to be cruel and severe but never causes listeners to feel cruel and severe. Here it might be helpful to know more about the setup of Freedberg's experiments.

▼ Response to Lopes

David Freedberg

Dec 3, 2002 11:02 UT

I'm grateful to Lopes for his clear comment on my piece. It offers the opportunity for clarification of my proposal. I would have thought that my claim that "a positive answer [to the question of the possible correlations between the composition of pictures and the responses they evoke] would entail a view of the relations between pictures and spectators that is not solely dependent on context, but is predicated instead on the possibility of being able to establish certain kinds of rules; and that certain kinds of responses are in fact innate" was sufficiently hedged with subjunctives to make it clear that I was by no means excluding the possibility of the pressures of context on the correlations we are seeking to establish. When I wrote *The Power of Images*, reviewers were also swift to suggest that I was excluding context as a pressure on basic levels of response; I was not. To insist that rules may be found for the relations between pictures and the responses they arouse is not, self-evidently, to exclude the pressures of context and the role of convention.

While I'm grateful to Lopes for his stringent reminder that universal does not entail innate, it is indeed the case that in this project we are looking for correlations that may be described as innate.

I offered the examples from musical history as exactly that: interesting historical precedents for the search for 1) correlations between particular emotions and particular pictorial composition, and 2) similar attempted correlations between emotions and key characteristics in music. These examples were not -- even remotely -- intended as proof. On the contrary: both the musical and the pictorial examples offer clear instances, as Lopes rightly points out, of the role of convention in the arousal of emotions. They were simply intended to suggest that we take the project they entail more seriously than has generally been the case.

I would hope that our experiment goes beyond what Lopes calls expression, and does indeed reach to the level of feeling -- though the distinction, I suspect, may eventually turn out to be less great than he wants us to think. If the matter were just the recognition or registration of emotions expressed in a picture or piece of music, then the

issue would be much simpler and indeed largely one of convention; which is not what we're after here.

▼ **innate and universal**

Dan Sperber
Dec 3, 2002 13:10 UT

Indeed, as Lopes observes, "universal does not entail innate." Conversely, innate does not entail universal: a specific response to some stimulus may be innate and yet found only when and where the stimulus occurs. The fact that music in C-Major is not universally available and has been theorized only in European classical music to elicit a characteristic response does not imply that this response must be learned and is not innate. Moreover "learned" and "innate" need not be mutually exclusive: the learning of a response may be more or less narrowly channelled (or "canalized" to use a technical term of biology) by innate dispositions. Think of imprinting (or of language acquisition for that matter) as an innately channelled form of learning. The resulting response (or competence) is partly innate and partly acquired.

To go back to the modes discussed by Freedberg, there is nothing contradictory in, on the one hand, recognizing that their theorizing and conventionalizing is local and historical, and, on the other hand, hypothesizing that they may evoke specific innate dispositions. This said, I would love to see some evidence.

▼ **Emotion, fiction and pretense**

Gloria Origgi
Dec 3, 2002 15:40 UT

In the last part of his comment, Lopes writes : "It may well be that E-flat Major is perceived by many to be cruel and severe but never causes listeners to feel cruel and severe".

This raises another important issue for Freedberg's Theory of Response, that is, how in most cases we manage to "inhibit" the response that is caused by a picture or a piece of music?

How is it that art makes us feel "as if" we were cruel or severe, as in a game of make-believe in which we pretend to be in a certain emotional state but we do not act in a consequent way?

This question opens the broader philosophical issue of our relation with fiction, but I think that it may be relevant in this context.

▼ **Innateness and Expression Recognition**

Dominic Lopes
Dec 3, 2002 17:36 UT

Just a remark on Freedberg's closing comment that "if the matter were just the recognition or registration of emotions expressed in a picture or piece of music, then the issue would be much simpler and indeed largely one of convention; which is not what we're after here."

I can see that expression recognition is simpler than arousal, since the latter entails the former but the former does not entail the latter (on some accounts of it). But why think that one is more likely to depend on convention than the other? Paul Ekman's studies showing that the recognition of facial expressions of the basic emotions is universal is good evidence that expression recognition is innate.

▼ Emotion as cognition

Noga Arikha

Dec 3, 2002 17:38 UT

Lopes, in pointing to a possible distinction between the expression of emotions and their arousal, is perhaps also asking whether emotions that are intrinsic to the viewer's experience of the painting arise out of a second-order recognition of what lies within the picture, or as a first-order reaction to it.

What might be interesting about the Modes, however, is what appears to be their reliance - for the analogy between musical keys and pictorial composition to work - on the notion that emotions are fundamentally cognitive. The trick, developed within the art of rhetoric, of arousing in the audience emotions that lead to a certain (moral) understanding of the world might be relevant here, although Poussin's aim was explicitly for painting to 'delectare' - truncating Horace's 'docere et delectare'. Beyond the distinction between arousal and expression, however, might the emotional experience summed up in 'delectatio' be cognitive at a first-order level? The Aristotelian notion that the sense-percepts which trigger emotions meet, so-to-speak, in the *sensus communis* (as Quiviger explains in his text) might be valid here. In this case the contemporary relevance of the idea of the Modes would be that of pointing to a possible cognitive equivalence between the senses, of the sort that may be demonstrated, for instance, by the phenomenon of synaesthesia.

How specified, then, would have to be current, developing theories of emotion as cognitive in order to tell us anything about the experience of works of art? Does the theory of Modes fit the bill in this sense?

▼ A comment on the Modes

Avigdor Arikha

Dec 3, 2002 19:39 UT

Poussin used an extract copied from Zarlino about the modes in his letter of November 24, 1667, to Paul Fréart de Chantelou, not only to justify himself for painting 'The finding of Moses' for Pointel. In spite of his rather confused way of presenting the theory of modes, Poussin actually seems to have implemented this theory from the end of the 1630s or early 40s. In a fragment of a letter to the painter Jacques Stella, quoted by Félibien, Poussin makes the distinction between "sujet mol" and "manière plus sévère" - soft or a severe manner, the visual equivalent of the minor and major keys. For example, Poussin's "Deluge" can be seen as painted in the "severe" manner, in a Doric mode. However the equivalent of modes in painting is actually expressed more by color than by composition, because sound and color do correspond, and such correspondences were established in a color scale by painters such as Arcimboldo and in a more general way by Paul Klee.

▼ PS

Avigdor Arikha

Dec 4, 2002 3:50 UT

Kandinsky elaborated in his 'Über das Geistige in der Kunst' (written in 1910), on musical sound that 'affects the soul directly' and the direct affect of form and color on "the soul". Quoting Delacroix, he writes : 'everybody knows, that yellow, orange and red produce the idea of joy'... However, the qualities of form in painting are divided between active and passive, light and heavy, etc. whereas color is not only divided in tones, but between cool and warm hues and values and their juxtaposition that constitutes the Simultaneous Color Contrast (as defined by Chevreul, 1839) and therefore, differ from sound.

▼ Still on mode-mood-congruency in art and music

Carlo Alessandro Landini

Dec 5, 2002 22:16 UT

David Freedberg's original approach to a possible congruency between visual (pictorial) and auditive (musical) stimuli is undoubtedly as meaningful as it is fascinating. Since it has been largely determined that there might be a "powerful" association between certain visual patterns and emotions (the mode-mood-congruency effect already stated by Poussin), and since the same findings have been determined for music (the "musical brain" which was prophetically outlined by Marc-Antoine Charpentier in his *Règles de Composition*, following in the footsteps of Plato and Aristotle) from the evidence of pleasurable responses to music correlated with brain regions implicated in reward and emotions, as some scientists of Montreal's McGill University have recently determined, one should be able to investigate on the same cognitive premises the wide array of human reactions triggered by visual stimuli (disregarding any established role of the visual cortex and evaluation scales based upon saccadic eye patterns, saliency etc.). Since there isn't a vast literature on this topic, Freedberg's contribution might encourage – on an interdisciplinary basis – the study of a possible relationship between attention arousal, emotions, and medical strategies of visual-related healing (this applicative aspect doesn't exist, to my knowledge, except in very abstract, condition-dependent forms) on the one hand, and of psychiatric semiotics and diagnostics (as in the Rohrschach Test, in the Lüscher Test, etc.) on the other. Furthermore, provided that a connection between visual and acoustic stimuli can be found on a cognitive as well as on a neural basis, this could possibly represent another step toward the full understanding of synaesthesia as a mutual, synergic, high-level reinforcement between two apparently distant codes and "evolutionary contingencies" such as the visual and the acoustic one.

▼ What could pictorial modes be like?

Roberto Casati

Dec 5, 2002 22:37 UT

Freedberg's project aims at establishing a correlation between some (classes of) objective features of paintings and (classes of) subjective responses. His guiding analogy is provided by musical modes, which are said to be correlated with specific emotions.

Two questions on that, somewhat technical.

2. In the case of musical modes, one of the terms of the correlation is specifiable, indeed specified. Just to fix the elements of the discussion: Modes are patterns of tones (2s) and semitones (1s) within an octave. So the major mode is the pattern

2212221

and the minor mode is the pattern

2122122.

Dorian (2122212), Ionian (2212221), and other modes, have yet different, but relatively straightforward patterns. (For a brief tutorial on musical modes, by John Chambers, see: <http://trillian.mit.edu/~jc/doc/abc/Modes.html>. You get an intuitive way of how different modes feel by playing scales on the piano, on the white keys only. Each starting point determines a different mode - if you start with C, you have major; with A, minor, and so on.) Some rules are obeyed by actual modes – semitones are never paired, for reasons which would be worth investigating, but which may themselves depend on cognitive constraints.

I mention all this in order to suggest that modes are simple and strong structures, which are very easily describable, indeed easily and completely described. I do not know if they correlate with emotional responses, but assume they do for the sake of the argument. Is there anything remotely analogous in painting, so nicely structured? What are exactly emotions expected to be correlated to, in the case of paintings? What could a visual mode be like, that it could have such a simple and strong structure as a musical mode?

2. Some of the lists of emotional responses are puzzling, at least in the context of Freedberg's argument:

D-Major Joyous and very warlike

E-Major Quarrelsome and peevish

As it happens, D-major and E-Major are the same mode: Major. They both obey the same 2212221 pattern. So the correlation cannot be with the mode?

▼ Modalities and the 'Aha' hypothesis

Noga Arikha
Dec 12, 2002 20:07 UT

Roberto asks "What could a visual mode be like, that it could have such a simple and strong structure as a musical mode?"

One might begin to answer this by reframing the question and by disregarding the notion of Mode for a moment: is there, in the first instance, a modality specific to musical perception? In other words, is there a specific way of perceiving a - temporally linear - musical piece such that our response to a range of notes is intrinsically incomparable to our perception of visual form? More specifically: do we perceive consecutive notes (or chords and harmonies) much as we do (micro)phonemes, in such a way that we expect one phoneme, or one sound-bit, to *entail* (formally) only a certain range of consecutive phonemes? If this is the case, would such a hypothetical relation of (formal) entailment (whatever that may be, and it does call for further definition) be applicable also to spatial form?

It is worth asking this last question in the context of Ramachandran's paper, and of the 'Aha hypothesis', as Pascal Mamassian calls it in his response: as I suggest there, the 'Aha' of the limbic system described by Ramachandran could perhaps be labelled as the 'satisfaction', following an 'aesthetic expectancy', brought on by a musical resolution or indeed by any formal solution, regardless of the modality. Might we get somewhere from here?

▼ Re: Freedberg and Lopes

Amy Morris
Dec 5, 2002 23:10 UT

Freedberg has stated that the larger endeavor of his project (with Perona) involves "defining correlations between particular kinds of compositions and particular emotional responses." This is a careful statement on his part that seems, perhaps, to have evaded attention. Defining correlations is not the same endeavor--as stipulated by those who specifically try for correlation--as analyzing predicates, inferring innate functions or structures, inferring or generating "rules" (formulated as hypotheses of causality or as regularities), or the general issue of who means what with the word "universal." (Stipulated as true? Found in every case, ergo inferred as necessary [and in some cases, also sufficient]? Difficult to argue without? Rhetorically pitched as intended to be supposed to be always true?) To begin with a careful act: a correlation is a correlation is a correlation. When Lopes says "I do think it's obvious that pictures can directly arouse their viewer's emotions and that there are rules describing the relationship between how a picture looks and the emotions it arouses," does his use of "rules" mean "logically necessary relationships"? Or statistical correlations? Or inferences based on perception of correlation? Or generalization into the universal of personal experience? Lopes continues: "...it does not follow as a matter of logic that the rules are either innate or universal (and universal does not entail innate.)" Is this an assertion that the rules are social? Or behavioral? But are the "rules" inferred as causal, or inferred as correlations?

Freedberg's project does clearly state a goal of moving from correlations to complex states of inference about "case-study" in Poussin as a prologomena to (or of) "a further syntactical level: between the look of a picture and the emotions it arouses. And the rules for that syntax, I believe, are universal, innate, and specifiable." My main question for him, at this point in time, prior to other extant questions, is curiosity: what do you mean by "syntax" in this statement?

(Do you intend, in your next installment, to discuss potential correlations between "syntax" and saccadic eye movements? If so, how will you and Pietro set this up?)

▼ Les limites

Clotilde Lampignano
Dec 6, 2002 9:45 UT

A' partir de Poussin , commence la recherche des relations entre la composition visuelle et l'émotion. Il me semble que cet essai soit joué sur les contrastes, la théorie contre la pratique, l'appétit contre la raison (ce que nous voudrions et la raison), à propos de ce que théorise Poussin quand il veut susciter émotions à partir de l'observation d'un tableau. Cela était du aux protestations d'un de ses marchands d'art. Dans l'histoire de l'art le succès du mode était du à la théorisation de Poussin à partir de l'an 1647, bien qu'il ait suivi l'exemple des Istituzioni armoniche. Dans la théorie de Poussin le mode est vu comme mesure ou raison, et forme , c'est-à-dire quelque chose de bas qui limite l'idée et la contraint. En outre le sujet (le mode) induit à l'émotion; la pratique (l'histoire) le limite. La forme (l'histoire) sont les pieds dans la poésie de Virgilio.

▼ Filtering out emotions

Anne Hamker
Dec 6, 2002 20:36 UT

Conducting experiments on art and emotions myself, Freedberg's brief overview raises a bunch of questions. Although I generally like the idea of searching for relations between pictorial composition and emotional response, I am not sure how to discuss this intriguing topic seriously without knowing details about the actual experiment.

I have to admit, the search for a syntax for the relations between how pictures look and how we recognize them still gives me a hard time. One problem I see with Freedberg's approach is (in a way similar to the one of Wolfgang Kemp) that he assumes pictorial compositions trigger emotions. In other words, emotional reactions are based on bottom-up processes. However, we all know that emotions are complex phenomena and at the same time a result of top-down processes. Therefore, I was wondering how Freedberg would filter out those emotions that are only caused by the pictorial composition. (Here, I do not agree completely with Lopes that pictures can directly arouse the viewers' emotions. This might be the case with some artworks but certainly not with all of them. It also depends on how we define "direct". A "direct" reaction is described as a stimulus-response mechanism, not as an emotion.)

Furthermore, I would be interested in the way Freedberg is going to measure emotions, as arousal is only one part of the story. Valence, for example, is another component of emotions.

Finally yet importantly, it is not clear to me what Freedberg wants to address, whether emotions or feelings. It would make a huge difference if he considers emotions equal to feelings. Following Damasio and colleagues, feelings comprise a conscious aspect whereas emotions do not.

▼ What the art of Aleksandr N. Skrjabin teaches us

Carlo Alessandro Landini
Dec 8, 2002 22:56 UT

I think David Freedberg does not only assume, as Anne Hamker claims, that pictorial compositions might trigger emotions. He also and before anything else draws our attention upon the fact that there might be a secret correspondence between the matrix of stimuli provided by visual arts and that of music. We should never forget, I guess, the lesson of the Russian composer Aleksandr N. Skrjabin. Is the tonality C red or white ? Is F sharp blue or green ? In the neverending history of music, these and similar questions did not seem to be as meaningless as we could think today. Between the 19th and the 20th century, in Russia, the most different answers came from famous artists and freethinkers: Skrjabin and Rimskij-Korsakov among the musicians, Kandinskij among the painters, Florenskij among the philosophers. The climax of a series of experiments on the old sound-colour congruency problem was seemingly incorporated by Skrjabin in the visionary score of his *Poème de l'extase*, which involved the use of the so-called clavecin à lumière, an instrument realized appositely to produce colours corresponding to the twelve keys of the chromatic scale. Strangely enough, if Kandinskij used to play the piano and the cello, Skrjabin's habit was to illustrate his compositions with help of diagrams and graphs. All of their writings shows that they had developed a very similar conception of art. Should this convergence be nothing but casual?

▼ **Link between art and emotion?**

Jose Luis Guijarro
Dec 7, 2002 10:41 UT

¡Hola!

The idea that art is somehow linked with emotions seems to be so deeply entrenched in our culture that nobody with some sense would dream to challenge it. However, I have always had problems with that notion, although they are hard to express clearly, I'm afraid. Let me try:

When I represent rice pudding in my mind, I immediately have a feeling of disgust. But when I represent cheese-cake, I get a strong and pleasurable emotion. Does that mean that I imagine that this is somehow a similar process than that which, according to Freedberg, should happen to me when I hear a C-major or a C-minor? It seems that in one case I have a gay and warlike emotion, in the other an obscure and sad one. Fair enough. But I don't happen to see why this process is linked with the art experience.

Let me turn to images now. Suppose I have just had a bad divorce, where I think my ex- has done all the best to harm me. Imagine further that I have fallen in love with what, for me, is a fantastic person who is helping me out of my family mess. Now, suppose I see a picture of the just-divorced person and another of my present "eternal" love. I will react differently to both of the pictures, won't I? Does this emotional difference have anything to do with art?

So what is the (I suppose) "specific" relationship between art and emotion that makes it so crucial according to our common mythology (which Freedberg seems to favour)? That it be unconscious, subliminal, or whatever? It can't be that! I have difficulties in imagining what the specificity of that relationship might be. Any hints?

If it is true that art happens only after displaying a given information so that it may be valued (or talked about) in a specific way, the valuing attitude may naturally get emotionally involved, for whatever reasons the individual might have. The fact that some of these reasons are universal or innate (or both or neither) does not seem to be relevant for art -at least as far as I am able to understand it.

¡Adiós!

▼ **DNA, Endorphins, Receptors**

Richard Minsky
Dec 9, 2002 19:22 UT

In the mid-1970's I taught a studio course at The School of Visual Arts in New York City that included techniques the artist can use to create emotional responses. Part of *The Theory of Museum Finish* included a section on Color Theory. The classics of Itten, Albers, Goethe, etc. were left to other faculty, and readings were assigned that included books on color healing, color meditations on the chakras, the effects of color stimulation on the endocrine system, etc. For example, one social study they read involved placing disruptive children in pink rooms to calm them down (pink stimulating the production of endorphins). As an experiment, the class took famous works of art and changed the colors in them.

To what extent is DNA patterning relevant? Universality may be constrained by genetic paradigms. Mitochondrial DNA reveals seven female ancestors for all Europeans [[Daughters of Eve](#)]. If the emotional effect of visual art is DNA based, the protocols of an experiment might include sampling endocrine responses to visual stimuli from members of various DNA populations.

Also, not all color receptors are in the eyes, and different people seem to have different ones. There are examples of people sensing color with the skin on their backs.

One TV show that excited me this year was on the Discovery channel. It showed a small desert mammal that had very strong male-female bonding. They isolated the chemical responsible for the bonding, and found it occurred in human women during childbirth. Then they flashed images in front of people and took specimens, determining that the chemical was created under stimulation by images of baby animals. If anyone in this discussion knows of a citation on this research I would love to know!

▼ Art and emotion ??

Pascale Cartwright

Dec 10, 2002 10:57 UT

The effect of colour or music on the mood or on emotions is now a well known fact. Some people, especially in far eastern countries, before decorating their house, will make sure they choose the right colour for the right room. The business man will do the same in his offices for his employees to work more efficiently. In the same way, soft music calms people in the subway, and helps children to relax in the classroom. Rhythmic music lifts the mood up. Scientists must be able to tell us which part of the brain is being stimulated. In slightly different fields (holistic therapies), as R. Minsky says, there is a theory of colour healing, but also of music healing which considers that each mode corresponds to harmonisation of each charka (energetic centre).

Some type of emotional response to colour or music could well be innate, I do not think that it is what Art is all about.

If a cognitive or even emotional response to colour or music is innate, the type of emotional reaction it triggers is certainly not innate or universal. The occidental person, being deaf to Arabic dodecaphonic music, can fully appreciate this same music after being a few years in contact with it. This is cultural. The young and the old will not have the same emotional response to Bach. Because young and old have a different culture. The same mode will not stimulate the same emotion in two different people. There is no syntax here.

When it comes to art, we must be careful using the words "emotions" or even "feelings" (A. Hamker) Rimbaud's vowels are reminding him of colours, not of emotions, although it gives us indications on how he perceives these sounds. The correspondence sound-colour is not involving emotions. In Art, the cognitive response might trigger emotions but might not, emotional reaction does not make art. I believe the cognitive reaction is of another type and that the neuroscience should look that way.