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The second or third major media revolution of the Twentieth Century has begun. "Video music" is a new term coined in this revolution. It would seem that the most revolutionary product, the videodisc, has generated the greatest potential for the kinds of change associated with revolutions. The videodisc is an ingenious application of digital reproducing technology combining sight and sound-tracks with the very utmost efficiency and economy.

I was an early partisan of this revolution having begun fifteen years ago to train underground on computers for the day when videodiscs would take over the marketplace. I dreamed of the new era to come. I plotted for secret revolutionary fusions and transfusions of the arts.

As happens in the tumult of revolutions, a most promising application for the videodisc's sight and sound intermix is cause of confusion more than hope. Yet this inevitable artistic application, which I will describe, may become a most popular and exciting and revolutionary fusion of music and visual art. There is a great future for an integral aural/visual art and it will have wide distribution by way of the videodisc's economics and logistics.

What would an integral aural/visual art be like? And what's new about it?

Al Jolson's voice and his picture on the screen were about the only aural/visual components of the "art" of the first sound movie. Between that day and now much has happened in the worlds of art. Both fine arts and the popular arts have changed in the direction of de-categorization, de-definition and even ephemeralization. Cross fertilization and synthesis have opened many eyes to new and different points of view regarding music and art. So it is appropriate and timely to review and compare aspects of the perceptivity of hearing music with viewing art.

## II

If it is common to think of music as possessing two dimensions, then time is represented by the horizontal lines and pitch by vertically arrayed symbols. At least that is the convention on paper. Yet the perception of music certainly is not two dimensional. The ears seem to reside at the center of a spherical domain. We hear from all around. We hear music as patterns of ups and downs, to and fro in a distinctly three dimensional architectonic space - a space within.

The eye is probably more outwardly oriented. We perceive objects and events outside at a point upon which our eyes focus. Yet the eye is no less perceptive of design than the ear. The mind's eye shares with the ear any inward experience of architectonic spatial constructions and would perceive them with the same pleasures, were they to exist.

Alas these interior fluid edifices hardly exist. Twentieth century abstract art has been, in some instances, a training ground for visual response to musical experience. A vision of almost mythical proportions has occupied a few minds with "color organs" for several centuries. Anyone can invoke a vision of that liquid architectural edifice dancing in the head. In fact, the evocation in the mind's eye of architecture in motion is precisely at the root of our enjoyment of music. Many people, with closed eyes at a concert, are "watching" the music. Still there exists no universally acceptable visual equivalent to music. It should exist and it will soon. Incidentally - surely it will not

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becalled, video music.

### III

"Architecture" is a lame metaphor for the exact perceptual experience of music. There is no terminology for the dynamics of architectonic pattern which gives due emphasis to the utter fluidity of musical motion. The ear perceives patterns of tone by means of infinitesimal inflections of microscopic bundles of air. Little wonder, that medium - that clay - which the composer "sculpts" is so flexible and dynamic. Newton's laws of mass, or thermodynamic laws are not suspended when a string quartet performs. It is simply that modulating air is lighter and swifter than modulating marble. Kinetic art efforts in this direction notwithstanding, even the lightest medium that a visual artist might select would not do, were he to aspire to sculpt time and motion in a visual medium out of some misguided envy of music.

This was true even before the first musical tone came from a human voice. But it is true no longer, not in the last third of this century. For we do have a visual medium which is quite as malleable and swifter than musical airwaves. That medium is light itself. While it was always available, means were found precisely to modulate light faster than sound (on a cathode beam computer display, for example) only very recently. Now musical instruments which modulate the air medium of hearing may be matched by other instruments which modulate, with equal exactitude, the light medium of sight. The two will make a surprisingly happy combination, provided the influences of musical traditions do not dominate or thwart an assertive roll for their visual partner. The audio-visual tracks of the videodisc obviously are best suited for this balanced partnership of sound and sight.

### IV

Laws of harmony ruled musical composition long before Pythagoras. It is almost as if by fault of the extraordinary success of composers of previous centuries, and even despite the facts of harmonic law, that many composers of this century have ignored or rejected principles of harmonic relationships and tonality. The crisis of contemporary music noted by Pierre Boulez and others is due largely to this rather unpopular ongoing search for other principles with which to capture a world of "new musical resources".

Yet the art of music deals with harmonic laws of physics. The integer intervalic ratios of tuning and tone sequence are simply there as physical fact. Arnold Schoenberg's remark to John Cage that "you must have a feeling for harmony" was not diminished the least by Cage's slightly bathetic protest that he had none. As it would not, were the late sculptor, David Smith to have protested that he had no feel for the weight and mass of steel.

Music doesn't just pass time. Music shapes time. In symphonies of Haydn or Mozart, repeating elements can be found to occur twenty to forty times. This amount of repetition will not work in poetry, nor prose nor any of the arts that evolve in time, except music. It is as if the composer states a figure, takes twenty or thirty steps and follows that with some other figure. The steps are hardly repeats. They are steps along a flow of time. The steps take us from here to there in time just as surely as our footsteps transport us in space. These steps give shape to time in that sense. Harmonic order allows this.

The crucial element of music is that harmonic strategies punctuate time with resolve and meter. The crucial fact of musical art is that these harmonic forces work their way upon the sense of hearing whether the composer elects to shape these forces for his purpose or whether he

composer elects to shape these forces for his purpose or whether he remains a ~~naïve~~ fool to their power.

Briefly - the refinement of harmony began the art of building things with time just as surely as civil engineering began the building of things with stone. Now we can build audio-visual "things" for videodiscs.

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Today we can apply harmonic laws to build visual structures. There is the capability to modulate light as accurately as musical instruments modulate air. But it is more interesting to observe - considering time structured arts of the future - since we can create integral aural/visual compositions in a domain of harmonic continuity, a universally acceptable visual art - an equal partner to music - and perhaps music's future too - has arrived.

Within this decade it may become known that the search for "new musical resources", begun in Arnold Schoenberg's era, has borne unanticipated solid-state digital consequence. It would appear that the major task assumed by composers at the opening of this century may only be realized as the century draws to an end. What began as a formal search for another body of theory for making music may end in a total redefinition of the art of architectonic temporality of which - after all - music is only a part.

If, as is often charged, the wellsprings of harmonic vitality ran dry about a decade or two into this century then perhaps all is about to flow - if not flood - once again; but now with totally unexpected new resources. The imaginations of many composers including Scriabin and painters too, including Kandinsky, probed with inadequate technology to discover these resources.

A composer may look forward to executing, first hand, an aural/visual digital creation. That is, using a new kind of instrumentation and a facile compositional procedure which borrows much from computer programming and editing practice, at last this new composer will share with the artist and sculptor alike hands-on options with regard to executing his own works. Digital instrumentation provides for the first time the capability to modify over and over, and replay again and again without any degeneration at all. This revolutionary facility is coupled with full selectivity within the range of real-time, to extreme slo-time or intermittant replay. Perhaps this would be described best as total temporal malleability.

As an historical aside, to waylay confusion, analog musical and video synthesizers are not the subject here. They are not likely to survive the brief epoch of their recent popularity. The product of these instruments has been facetiously characterized with the unkind metaphor: "video valium", which is not perhaps too great an injustice to a number of musical and video compositions of the recent past. An era - not just a few composers - has been given a bad name.

Yet as digital compositional instruments do become available and they begin to draw creative people, composers will find a visual medium alongside a musical one with the same editing and viewing and re-editing capabilities. They will discover a potential partnership: fruitful and as valid as the partnership which composers for centuries found in writing for example, keyboard and string combinations. That partnership will be grounded on valid harmonic interrelationships which are equally applicable to sound and image. The creative product of these new composers will go directly to the videodisc publisher.

Long live the revolution.