Eduardo Paolozzi
Born Edinburgh, Scotland, 1924
Resident London

Eduardo Paolozzi was visited in London by MT in October, 1968. When A & T was described to Paolozzi on that occasion, he responded by expressing interest in working with computers. His work at that time was involved in computer-generated imagery, and thus it was natural that he should wish to develop these ideas. In Paolozzi's letter to us of October 30, he spoke about the areas he visualized pursuing:

> It is my intention of bringing a portfolio of schemes in connection with the Los Angeles show. These schemes are an extension of work concerning images and words (ref: the Berkeley catalogue; Christopher Finch's book *Art and Objects*).
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> You may realize that I did a certain amount of computer research while at Berkeley, but the Art Department there was unable to extend any of these ideas—which certainly could be realized within the framework that we discussed in London during your visit.
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> At the moment, I have an assistant working on colour mosaics and endless permutations on the grid pattern. This is according to my interpretation of current computer literature and can be used in connection with sound experiments. Also the reverse, I understand, is possible; which is, sounds can be used to create patterns.
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> The feasibility of the theory of these programmes require an electronic design engineer for further comment, and this particular auxiliary is being investigated at this moment.
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> Next week, a visit is planned to the Computer Division of the Ferranti empire, the particular study here is numerical control machines and their particular computer-aided design programme . . . .

Following this letter, we sent Paolozzi literature on Information International. Paolozzi arranged to fly to Los Angeles for a week in January, 1969, to visit companies. By the time he arrived, IBM was tentatively available for an artist match (though they were still considering Vasarely's proposal), so we scheduled visits to their Los Angeles headquarters, to Information International and also to Wyle Laboratories. The tour to Information International was unproductive. For various technical reasons, Paolozzi felt that their capabilities in computer graphics would not be of use to him. The situation at IBM was somewhat more complicated. Paolozzi first toured their downtown Los Angeles offices and saw various advanced computers demonstrated; the next day, he met again with Dr. David Heggie, our IBM contact man, and we discussed the possibility of touring IBM's huge San Jose plant. This meeting was difficult for everyone involved. Somehow Paolozzi did not feel that Heggie or IBM either understood his intentions or were really prepared to offer him the kind of freedom or the degree of access to their personnel and hardware that he required--though the corporation was equipped technically to deal with whatever demands the artist might make in the area of computer graphics. On the evening after this encounter, Paolozzi telephoned Jane Livingston from his hotel and explained to her that he saw no point in touring the San Jose facility or bothering further with IBM. Paolozzi then visited Wyle Laboratories. He was interviewed by the company's president, Frank Wyle [1]; Gail Scott wrote the following memo recounting this event and later discussion:

1

GS went with E. Paolozzi to Wyle Labs for interview with Frank Wyle. Wyle's first take was that Paolozzi should be exposed to many facilities for first week and try to absorb the diversity of technologies available. He suggested making a sculpture using 'birefringence' flow-pattern technology which has a very impressive visual effect [2]. Size is no limitation; it's merely a question of learning the principles of the technology and then working out the mechanics of the construction—which can be done anywhere. Birefringence consists basically of sheets of semi-transparent polarized screens through which a closed-loop liquid circulation system is channeled. (The liquid is water with an additive which causes the birefringence effect.) An internal, monochromatic light source is used which is modulated and changed according to certain flow principles of the liquid as it is pumped through the channels. Eric Miller, a physicist at the Huntsville facility, is the authority on the subject.

Paolozzi was interested in this possibility, but still would like to work with computer graphics. However,

in a meeting with MT, Paolozzi, JL and BA on January 17, it was decided that because of the problems with Vasarely and IBM, it would be best for Paolozzi to concentrate on working something out at Wyle. Paolozzi is not interested particularly in another 'Howard Wise-type' visually interesting sculpture, but wants to penetrate to something more meaningful. He is willing to pursue the possibilities available at Wyle, provided he can get an informed corporate person to give him an extensive tour of their facilities when he returns in March to begin work. I suggested that Kenneth Eldred, whom Paolozzi and I met yesterday, and who is Director of Research, managing all research activities at the Labs, would be an ideal contact man. Wyle said that Eldred is 'the most creative person around here.'

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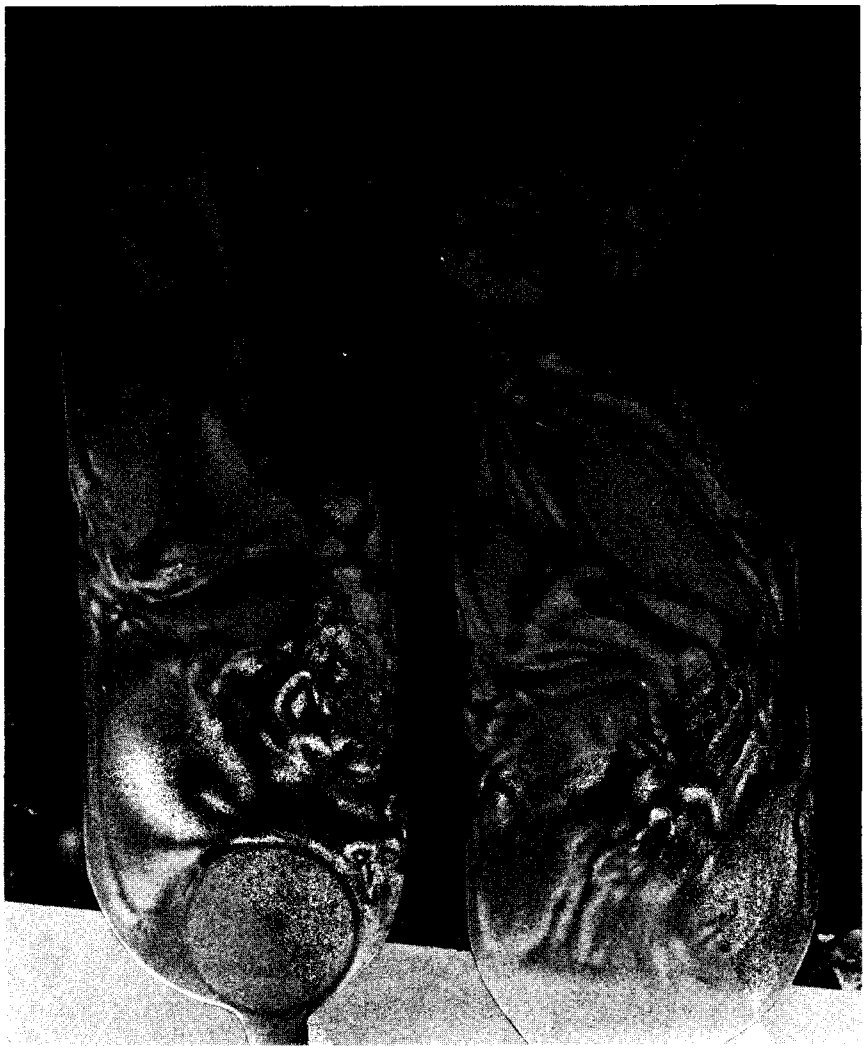

Paolozzi seemed undecided when he left Los Angeles about the medium—birefringence, or binary infraction—with which he was encouraged to experiment by Frank Wyle. He was still reluctant to abandon his idea for working with computers, but apparently he became increasingly intrigued, as he later thought about it, with the notion of using a technique entirely new to him and unrelated to his past work. In any event, he wrote to us in February, saying that he would be sending an assistant, James Kirkwood, to Los Angeles before he himself could come from London, and he indicated his willingness to work at Wyle Laboratories. Hal Glicksman wrote this memo after touring Wyle with Paolozzi:

Met with Frank Wyle and Harry Greybill to view working space and see demonstration of effect that Paolozzi would utilize. Space was located on upper floor at northeast corner of the lab complex. Rather an elaborate route from the entrance. Space is a separate room about 15 x 20 feet, drafting table along one wall, separate desk and work table. Paolozzi plans to move in March 18, 10 A.M.

Viewed demonstration: A special liquid dye changes color under polarized light according to the speed at which it is flowing. Thus the rate of flow of liquids in a system of plastic pipe is graphically illustrated by rainbow hues in the liquid. Corners, bends, constrictions, and irregularities in the pipe all cause brilliantly colored turbulence to appear in the liquid. The fastest flowing parts are bright yellow, the slowest parts green. The entire system can be slowed down with a master valve that causes all the liquid to darken and shift color toward the green. The system when completely shut down is an almost opaque, dark green. Elaborate pipe systems can be simulated by cutting a pattern out of a flat sheet of plexiglass and sandwiching it between two solid sheets. The liquid flows in the cut out spaces.

Paolozzi and Kirkwood worked daily at Wyle for about three weeks, consulting with several technicians who

advised them about the capabilities of chromatic control which could be obtained with the polarized fluids. A table was set up with a sort of flat tank set on it, into which dyes were pumped under polarized plastic sheets. Paolozzi was able to determine by observing the flow patterns under various conditions in his apparatus what he might be able to achieve on a larger scale. He visualized making a wall of color patterns, and thought of incorporating some sort of mechanism whereby spectators could themselves manipulate the color patterns either by "playing" a console, or simply by walking in front of the structure. The more he worked with the device, however, the less confident he became that the medium was worth developing into an art work. He also felt that the environment at Wyle was constricting to him, and he sensed that he was being "railroaded," to use his word, into a narrow and unreasonably specific area, when he would have liked to freely explore the complex of buildings around him and conceivably make use of other resources available at Wyle.

On April 4, MT sent Frank Wyle the following letter, terminating the Paolozzi/Wyle collaboration:

> I have been informed by Eduardo Paolozzi that he will not be able to continue his 'residence' at Wyle Laboratories. The artist believes that only work of insufficient value could result from the collaboration. Paolozzi feels that the only area at Wyle made available to him concerned binary infraction, and that this area, as interesting as it is technically, is not fecund ground for his personal aesthetic. He also indicated to me that his attempts to make something in this area were hampered by various restrictions placed on the scope and scale of his involvement; means of implementation were, in Paolozzi's opinion, too restrictive to allow for success.
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> I very much regret that this collaborative effort has failed. It is the first time a contracted artist and a Patron Sponsor Corporation have not been able to work out a satisfactory relationship. I tried to contact you when this situation developed last week in an attempt to ward off the problem. Perhaps we should discuss this matter, at your convenience, in order to prepare for future involvements with artists. Since we regard Wyle Laboratories as one of the most extraordinary of the thirty-one corporations joining with us in this program, we are especially eager to have a valuable situation develop.

HG took Paolozzi to both Cal Comp and to TRW Systems before the artist returned to London. Paolozzi and TRW agreed to work on a computer graphic project; the artist would send the company drawings and instructions by mail from London for them to program and compute. We have not been able to ascertain from Paolozzi whether work is indeed progressing at this time.