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40, 000 roses –
or the perversity of Polaroid

I

It is not easy to date precisely the beginning of the SX-70 era. There are at least three possible candidates for the honor.

The Polaroid SX-70 Land camera first got into the hands of the public in November 1972 in Miami. In the ballroom of the Fontainebleau hotel, after screenings of a short film by Charles and Ray Eames explaining the camera, and a television commercial in which Laurence Olivier demonstrated how to use it, the assembled photography dealers were allowed to try it out. Polaroid loved Florida – the company had also used Miami as national launch pad in 1948 for the original (sepia) instant photography. The city was full of wealthy tourists who would carry out nation-wide publicity simply by taking the magical new camera home with them at the end of a holiday. The state's sun and warmth helped as well, since the earliest versions of SX-70 film were notoriously temperamental – hungry for light and cranky in cold conditions. In the end, photo dealers bought SX-70 cameras in bulk in Miami and sold them at twice the recommended price to photo stores around the country.

But Miami was really only a sideshow. As with all new Polaroid inventions, the camera had taken its formal bow at the company's Annual Meeting in Massachusetts, home state to the Corporation since its founding in 1937 as a maker of synthetic polarizers. In April of 1972 in a warehouse specially converted for the occasion and in front of thousands of adoring shareholders, Edwin Land, inventor of the camera and the company, gave the first public demonstration of the film on a raised dais with the assistance of lapel mic and slide show. With his theatrical combination of science and spectacle he explained the countless innovations that had gone into the "pocket-sized" device and the small stiff square images it produced. Afterwards, teams of photographers barricaded inside eight demonstration stations showed the audience what the camera and film could do. None of the shareholders got into their possession any of the still trial prints though – each one deemed satisfactory for public consumption was firmly fastened to railings on the outside of the stations, secured against the marauding hands of infiltrators from Kodak, amongst others. After all, at this stage, no one at Polaroid yet knew when the camera would be made available, such were the uncertainties on the numerous production lines contributing to the "SX-70 system", as Polaroid called it.

Even a year later, at the 1973 shareholders meeting, when Land strolled freely among his fans snapping pictures, and those same shareholders were invited to try out the camera for themselves, even at this point, SX-70 cameras and film were perilously scarce, with Polaroid factories stretched to capacity, and unable to come close to satisfying demand for the gadget of the moment. Nevertheless, no expense was

spared at the typically lavish event, including in the provision of precious film. Perhaps the most extravagant act was to attach to the front of every single shareholders' report an SX-70 print of a red rose. There were perhaps four thousand in attendance, but ten times as many reports printed: 40,000 annual reports, and so 40,000 SX-70 prints of a rose. Of the same rose? We will never know, but it seems highly unlikely. Either way, if you are in possession of one of those rose prints now, it is a collector's item, a piece of photographic history. In the official Polaroid archive held by the Baker Library at Harvard Business School, there are no roses attached to the numerous copies of the 1973 report in stock.

The rose was ostensibly chosen to show off the film's handling of tricky reds and delicate detail, as well as the close-focusing capacities of the SX-70 camera. Forty years on, it is not these features of the rose print that give us pause, though. It is instead the thought that every single one of these 40,000 prints had to be individually produced. That meant 4,000 packs of film, not counting quality control, and a team of photographers making images on an industrial scale. Today, when at the press of button a single image can be sent instantaneously to ten or a hundred times as many screens, it seems a kind of madness to take 40,000 separate exposures in order to attach a singular image-object to each and every Annual Report for 1973. Unlike the photo sent immediately as code around the globe, of course, each one of those rose prints was a singular object. Even if the rose was photographed under controlled lighting with SX-70 camera on a tripod, each print must have been infinitesimally different from the next, taking into account minute variations in chemistry and the inevitable wilting of the rose or roses.

A kind of madness, then, but also a perfect lesson in what an extraordinary device Polaroid had invented: a machine for making unique photo-objects, every print one of a kind, because not easily subject to the normal processes of photographic reproduction. Nor did Polaroid stop with the 40,000 roses. Later that year 26,000 SX-70 prints were made of a bowl of fruit for a publicity package for dealers; in early 1974, 90,000 prints of bowls of fruit were made for the international launch of the SX-70; and so on. In the 1950s Polaroid consultant Ansel Adams had complained to Edwin Land and Meroë Morse (head of the black and white research division, one of many Smith College fine arts graduates working at Polaroid, and Adams' main contact there) that Polaroid advertising and the Annual Reports too often used non-Polaroid film. He argued that this was at best dishonest, at worst an obstacle to improving the film. If Polaroid was not confident enough to use its own products in its advertising, then what chance was there that professional photographers would take them up, as Adams hoped they one day would? When Adams spoke, Polaroid listened, and this dizzying multiplication of fruit and flowers can be seen as the logical outcome of those purist principles laid down twenty years earlier by the influential consultant.

The 40,000 annual reports individualized with SX-70 prints was not a gimmick, then, but a matter of company pride, a display of confidence in the new product. Still, there is no getting around the paradox of this expensive and time-consuming promotional act. What is a new technology, after all, if not a device designed to *reduce* human labor? What is the point of a machine if it is not replacing the toil of human hands, rather than adding to it? Of course, instant photography's great achievement *was* the elimination of an entire stage of photographic labor. By incorporating the darkroom

into the camera itself, the original Polaroid photography of 1948 cut out entirely the work of the photo-finisher, although it still left considerable tricky tasks for the photographer. These included timing the film, pulling open the camera's back, and peeling the sticky print and unusable negative apart in the earliest versions, and, from the middle 1960s, pulling the film out of the side of the camera and peeling the final print from negative. SX-70 film eliminated this extra work by providing a single, self-contained film unit with no waste to throw away. For this reason it was sometimes known for short as "integral" instant photography, while the earlier versions were known as "peel-apart". Land himself was not keen on the word "instant" and insisted, with a scientist's precision, on calling his inventions "one-step photography" in 1948, and with the advent of the SX-70 in 1972, "absolute one-step photography".

And yet, in spite of these advances, and this increasing transfer of photographic work from human to machine in the various iterations of Polaroid technology, there is still a sense in which Edwin Land's invention cuts across the main historical trajectory of photographic progress. If the first great triumph of the photographic arts was the capture of an image, and the second was the fixing of that image, then the third must have been making it possible to reproduce that image. This was William Henry Fox Talbot's great contribution when he invented the positive negative process in 1839, but the provision of a negative was only part of the challenge. To make use of that negative in an efficient way in order to enable the mass reproduction of photographic images was the scientific puzzle that faced succeeding generations of photographic experimenters. In the half century or more following Talbot's discovery, there were numerous solutions to this problem: Blanquart Evrard's mass printing on albumen paper, photolithography, the Woodburytype, photogravure, and the half-tone process for press photos. It is fashionable nowadays to claim that digital photography has permanently changed the photographic landscape, but in many ways it is simply the latest solution to an age-old problem: how to exploit the *potential* for a single photographic image to be turned into multiple identical copies.

There is a case to be made for Polaroid photography anticipating digital snapshot photography.[1] Like digital photography it allows us to see the image quickly, and removes from the equation the intermediate steps in the darkroom. However, Edwin Land's invention is in other respects a sharp deviation from the continuous development of photography's capacity for mass reproduction, a development which took it from photo-engraving to half-tone to JPEG. This is because Polaroid is, in effect, if not precisely in practice, a positive only process. The SX-70 print contains seventeen chemical layers, nine of which are negative, but those negative layers are fully integrated with the positive and are in no way usable in any traditional sense. In order to reproduce an SX-70 print, you need to re-photograph it with some other photo format, at which point it ceases to be an SX-70 print. It shares this limitation with the earliest photographic image, the daguerreotype, as well as with cheap late nineteenth-century forms such as the tintype and the ambrotype. Present it though they might as a revolutionary form of photography, with the SX-70 camera and film Polaroid in fact harked back to a kind of photography that had long been surpassed.

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[1] See Peter Buse, "Polaroid into Digital: Technology, cultural form, and the social practices of snapshot photography," *Continuum: Journal of Media and Cultural Studies* 24: 2 (2010).

II

Rather than marking a natural stage in the history of photographic progress, then, the SX-70 and its "one-step" predecessors might be thought of as discontinuities in that history. One word to describe this peculiar backwards turn is anachronism. Another is perversity. The term need not have negative connotations. If we take "perversity" to be any departure from an accepted norm, and agree that by the mid-twentieth century, and certainly in 1972, the norm was for photography to be negative-based, then Polaroid photography is technologically and photographically perverse.[2] It is perverse, in 1972, to invent a photography that *cannot* be copied without great difficulty. It is perverse to take 40,000 separate exposures of a rose or roses when it is infinitely more economical in time and effort to take a single exposure and reproduce the image using modern and convenient processes. It is perverse to make work where no work should be necessary.

All this is a way of saying that the SX-70 is not the most practical of inventions, taking one step forward by dispensing with all the labor of the darkroom, only to take another backward by rendering reproduction virtually impossible. This peculiar fact of course carries its own attractions, especially for those, like artists, for whom utility is not a priority. It is often pointed out that Polaroid photography, by virtue of creating singular prints, lends itself well to recuperation as art object, for which an aura of uniqueness is indispensable in the production of value. No doubt this is true, but Polaroid photography's perverse disdain for utility must also be a major contributing factor to its adoption by modern artists, who themselves, Duchamp onwards, so often divert objects from their original, useful purpose. Perhaps this is why so many artists who work with Polaroid materials, including many in *The Polaroid Years*, also work *on* those materials. It is as if the perversity of the SX-70 – its refusal of the basic photographic possibility of reproducibility – demands a tribute from the artist in the form of a supplementary, and of course experimental, labor.

In fact, this basic perversity of the SX-70 print – as well as other forms of Polaroid photography – and the consequences of this perversity for "normal" photographic work, can help us to understand many of the experiments undertaken by artists with the technology. We might even suggest that the most interesting experimenters with Polaroid photography after 1972 were responding to this double challenge that Polaroid had posed. Faced with the SX-70, the artist had to find a way of engaging both with the photographic work that it did away with, and the unnecessary work that it added.

One of the richest seams of artistic work with Polaroid photography, and one which is well represented in *The Polaroid Years*, is a variation on the theme of the 40,000 roses. As A.D. Coleman noted not long after the introduction of the SX-70, the technology seemed to encourage the production what he called "multiples" or "sequences". This might involve photographing the same object many times under slightly different conditions, or breaking an object or person down into smaller segments in order to reconstitute them as a "whole" when the images were assembled. The trend often takes the form of portraiture, as in the work in *The Polaroid Years* by David Hockney, Chuck Close, John Coplans, Catherine Opie, and Robert Heinecken,

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[2] This idea was first suggested to me by Helen Stoddart of Glasgow University.

but it need not, because the main effect depends primarily on the *collective* display of multiple prints, a strategy equally evident in the works by Laura Cooper and Nick Taggart, and Dash Snow, as well as in Dave Schubert's image of Dash Snow in the bath, immersed in Polaroid prints. The strategy perhaps finds its purest and most austere exemplar in Michael Snow's "Authorization" (1969, National Gallery of Canada) in which the Quebecois filmmaker photographed a mirror with a Polaroid Automatic, affixed that image to the mirror, and photographed it again, and so on. Four images later and the mirror was covered with images of itself and of the photographs that covered it. Polaroid multiples quickly made their way into other media: Wim Wenders, a celebrated photographer in his own right, had his alter-ego Philip Winter laying out SX-70 prints on the sand like so many Tarot cards at the end of *Alice in the Cities* (1974), and in *The American Friend* (1977) he directed a listless Dennis Hopper, stretched out on a pool table, circled by SX-70 auto-portraits that he continued to produce in a sequence without clear beginning or end.

Coleman attributes this tendency to the speed with which the Polaroid image is produced, and where the sequence is of SX-70 prints, to the camera's ability to shoot continuously. This is surely correct, and we could add to these factors, the *inability* of the camera to provide a negative for further prints. In the ordinary photographic situation one image is enough to guarantee a multitude, but in Polaroid photography, one is not in itself sufficient. The generation of sequences and multiples is a way of making up for this insufficiency. Artists have found many names to describe the resultant assemblage of images: composite (Hockney); frieze (Coplans); diptych (Close); collage (Neimanas and many others); suite (Oppenheim); or simply "wall" (Dash Snow). Whatever the term, it is clear that the whole is necessary to compensate for the basic limitations of each part. It only needs to be added that such compensation is never successful: each collage feels disquietingly fragmentary and incomplete, a sensation only amplified by the absoluteness of the thick white borders if the piece is composed of SX-70 prints.

In this context it is worth remembering that the SX-70 print does not promise fragmentation, but rather integrity. Polaroid called film of the SX-70 generation "integral" because it emerged from the camera fully formed and in a single discrete unit, unlike earlier versions of instant film. Also unlike those earlier versions, which at various points had faded or curled if they were not treated with a special coating, or were vulnerable to scratching, the SX-70 print was a tough little package. An ordinary snapshot will meekly surrender to crumpling or tearing, but it requires scissors or fire to vandalise the stiff and sturdy integral print.[3] Its most extraordinary bit of armor was its transparent top layer of opacifying mylar which allowed the photographically impossible – an image to develop in direct strong light. For the creatively inclined, this apparent invulnerability, combined with the camera's elimination of the usual site of post-exposure creativity – the darkroom – might have been a deterrent. To some, though, it was a challenge to find the holes in the integral print's defenses. In the first years of SX-70 photography there was one major hole: the photographic emulsion took up to 48 hours to harden, and while it remained soft, it was possible to work upon it with a sharp implement such as a dental tool. The print was tough enough to withstand scratching, but firm pressure applied to its

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[3] Sean Cousin writes at length about what he calls the indestructibility of the SX-70 print in his excellent blog on the integral Polaroid, *Pentimento / Polarama*.

surface would break down into lower levels in the layers of dye and change the color and texture of the image. The emulsion could even be worked upon in this way without initially exposing the print. The effect was an object that looked like a strange hybrid of photograph and painting. Polaroid had advertised integral instant photography as a form requiring little or no technical skill, but by uncovering this potential for manipulation, artists such as Bruce Charlesworth, Lucas Samaras, Les Krims, and John Reuter had ingeniously found ways to return skill, and laborious effort, to the process.

These artistic assaults on the integrity of the integral print, and the corresponding creation of work where none was necessary, took a range of additional forms. In their explorations, Reuter and others attacked the print from the back, inserted materials into it, painted directly on the exposed surface, and discovered the Polaroid transfer process, a violence to the image that has found widespread popularity. Experiments with the technology also led to testing it with extremes of heat and cold: still developing prints were placed in the freezer, or popped in a toaster. This is the logic of the trial: the resistant materials are put through a series of demanding tests to determine their limits. The same logic is operative in other Polaroid work as well. Ellen Carey, for example, describes her work with large format 20 x 24 inch Polaroid film with the language of physical effort: "pulls", "lifts" and "drops". And she too is testing the limits of the form, pulling the print out of the camera and past its usual 24-inch stopping point; lifting the negative from the positive and dropping it back down as if to subject it to an ordeal by height. Once again it is a case of the artist finding a way to return labor where the technology has made it redundant.

The response of artists to the perversity of the Polaroid image, then, has often been to pervert it even further, to find ways to deflect the simple snapshot camera from its primary vernacular purposes. This does not mean that there are not points at which the artistic and the vernacular uses of the SX-70 dovetail. In fact, when we mention perversity and Polaroid in the same breath, it is probably neither photo-collage nor the manipulation of dye layers that first spring to mind, but a rather less rarefied practice shared by amateur snapshooter and Polaroid artist alike. For obvious reasons, the hard evidence is thin on the ground, but it is something of an open secret that Polaroid, by eliminating the darkroom and taking the professional photo-finisher out of the equation, turned countless of its users into amateur pornographers or erotic artists, depending on your point of view. Now that digital cameras have made this practice ubiquitous and banal, it is hard to remember that not that long ago virtually all amateur snaps had to pass through the semi-public realm of the local drugstore or photo-finishing lab on their way to the family mantelpiece or photo album. If we leave aside the exhibitionists known to deliberately send obscene exposures through such avenues, as well as those with enough *sang froid* to calculate that drugstore developing is done mainly by automated machine, for the vast majority the thought that such images might get into the wrong hands was too much of a deterrent. Not only did Polaroid lift a basic inhibition, but it added an extra dimension to the privately-made erotic image. There was a special kind of sensuality about the image itself, which was, as has already been noted, a tactile thing, an object as well as an image, and one whose charge was increased by appearing in the very scene in which it was made.

We know all this through anecdote and through popular representations of Polaroid photography in film and in fiction, but we also know it because artists have taken full advantage of the erotic potential of Polaroid photography. Taking what is in essence a private, hidden activity, they have made it visible by transferring it to the public space of the gallery and the printed book. Speaking of his early adventures with a Polaroid Automatic in the late 1960s, Lucas Samaras declares "I was my own Peeping Tom", and gives a frank confession about the primal scene of his "Photo-transformations" series:

> I came home and I took my clothes off and it was wonderful, I never had such a wonderful experience with a camera or photography before. It was like finding some fantastic lover, and you were unworthy, but you were glad that this ethereal creature was paying you a visit.

Samaras is far from alone among Polaroid users, both in the vernacular and artistic camps, to praise the form for its "intimate" qualities. And like many artists who used the Polaroid camera, such as Hockney, Samaras had no formal training in photography. The camera's built-in darkroom was not so much a device for overcoming social inhibitions – not usually a problem for modern art, which thrives on busting taboos – but a handy tool for overcoming a lack of training.

Besides Samaras, in *The Polaroid Years*, the work by Robert Mapplethorpe, Les Krims, Jack Butler and Dash Snow all plays on the meanings of Polaroid as an intimate or explicit form. Like Samaras, both Mapplethorpe and Warhol make use of formats from before 1972, but it is really with SX-70 technology that Polaroid's reputation for do-it-yourself erotica really took off. The "SX-70" takes its name from the official project code for the original Polaroid film research of the 1940s, but it didn't take long for alert observers in the 1970s to detect a missing vowel. Jack Butler spells it out with his "Sex-70 series" and John Updike, in *Rabbit is Rich* (1981), makes it an unpleasant discovery for his protagonist Harry Angstrom. Butler, along with Robert Heinecken in his "Hustler Blind Beaver Hunt", makes a direct link between homemade Polaroid obscenity and that which was becoming increasingly available on the top shelves of newsstands. It is in fact very tempting to point out the way in which the arrival of the SX-70 in the early 1970s coincides almost exactly with the boom in hard core pornography in the United States. Perhaps one day a history of sex and its representation will comment on the fact that SX-70 debuted in the same year as *Deep Throat* (Gerard Damiano, 1972), the film usually credited with inaugurating hard core. Paul Thomas Anderson's affectionate account of the epoch, *Boogie Nights* (1997), has already made the link, making one of its fictional porn stars, "Brandi / Rollergirl" (Heather Graham), an SX-70 enthusiast.

The artistic-erotic Polaroid subsequently became institutionalized, even generating its own devoted high production journal – *TicKL* – as the Polaroid era wound down from 2007 to 2009. The intersecting histories of the "explicit Polaroid" and public pornography, and the ways in which artists knowingly alluded to the codes and conventions of both of these in their Polaroid work, should not, however, obscure the striking divergences between the two. As Linda Williams has demonstrated, the drive of hard core pornography was a kind of "frenzy of the visible", an obsession to show everything, to bring sex fully into knowledge. Anyone seeking such total visibility in the perverse Polaroid will be sorely disappointed. Whether it is a function of the

small image size, or limitations of focal depth, or the odd flattening effect of the SX-70's wide-angle lens, the explicit Polaroid tends to be partial, incomplete, the object disturbingly close or strangely distant. The explicit Polaroid suggests rather than divulges, hints rather than exposes. Standing in front of such an image, the viewer is most likely to think, I know it is explicit, but I don't know what exactly I am looking at.

III

Toasting, freezing, mutilation, dirty pictures: this was not exactly what Polaroid had in mind when they launched the SX-70 in 1972 on their core family market. Nowhere in official company documents is it recorded what the Polaroid Corporation thought about instant amateur erotica, but it would have been impossible for them not to know what was going on, and well before the SX-70 made the practice even easier. *Mad* magazine hinted openly at the Polaroid's potentially illicit uses in its November 1959 issue with a spoof ad, "60 seconds to divorce court", which asked "Caught your hubby in the act?" The title played on Polaroid advertising, which made much of the 60 second developing time for its "pictures in a minute." Even if they kept an official silence on the matter, they were not about to discourage it. The entire financial model at Polaroid, as Elkan Blout and others have pointed out, was based on high profit margins from film sales, with cameras as loss leaders. Any additional ways to keep that throughput going was therefore welcome. The strategy was one shared with Kodak, which also relied heavily on film sales, and goes some way to explaining why these two giants of the photographic industry hit such hard times at the end of the 1990s. With the advance of digital photography, conventional film sales shrank hard and fast, and neither company was able to find sufficient new revenue streams.

As for the various attacks carried out on the body of the SX-70 print in the name of art and experimentation, anecdotal evidence suggests that Polaroid scientists were at first extremely annoyed at such attempts to undermine the years of research they had put into perfecting the miraculous little film packet. Their response was to work hard in the laboratory to make the SX-70 emulsion harden faster, and soon the original 48-hour window for working on it was down to a few minutes at most. At the same time, Polaroid quickly realized that this new generation of artists, in general not skilled technicians like Ansel Adams, were nevertheless a tremendous asset, both in terms of the discoveries they made about the film, and the wider publicity their work offered. The 1970s and early 1980s were a period of great generosity on the part of Polaroid, which handed out large quantities of film and cameras as part of the well-documented Artist Support Programme, and asked very little in return in terms of final art. They did not need to ask for large numbers of images, because their real investment was in the association of the Polaroid name with a series of high profile artists. Polaroid, thought by many to be a maker of frivolous party cameras, proudly trumpeted this association in a sequence of ads in *The New Yorker* in 1977. The ads, which featured artwork by Samaras as well as Marie Cosindas, clearly found the sort of audience Polaroid was looking for, because they merited a mention in one of the most influential photographic tracts of the past fifty years, Susan Sontag's *On Photography*.

It was no bad thing that artists were able to suggest to Polaroid the possibilities latent in SX-70 film, and that Polaroid was eventually open to these suggestions, because

there was much evidence to indicate that Polaroid did not know at the start exactly what it had invented. Edwin Land was justifiably proud of the fruits of decades of research and millions of dollars of investment, but this led him to some rather grandiose claims about the significance of the camera's contribution to world civilization. In his introduction to "The SX-70 Experience", a no-expenses-spared booklet produced to celebrate the achievement, Land described the camera as "an invaluable instrument for discernment of prehistoric bonds to each other" and intimated that it might help combat "evil" in its technological manifestations. Some of this overweening rhetoric even made it into the Eames' film on SX-70. And yet, in the same brochure and in other promotional material from the period, Polaroid reproduced SX-70 images minus the white frame that was to become so iconic and arguably the main feature that distinguished the Polaroid image from other kinds of photograph. To them, the wider white strip at the bottom of the print was clearly purely functional – it housed the "pod" of developing reagent – and they did not anticipate the formal importance it would assume. In line with the techno-utopianism expressed by Land, Polaroid concentrated in its promotion of the new object on the wonders of the camera's viewing system and the marvelous thinness of the multi-layered "sandwich" of dyes, developers and opacifiers that made up the film unit. This fetishisation of optics and chemistry led in its turn to some beautiful, and much-circulated images: a cross-section of the film layers and another of the path of light through the camera.

The final dimension of the SX-70 experience that perhaps no one could have anticipated was the series of rituals that it gave rise to. These included tugging the developing print from the jaws of the machine that gently gripped it after exposure, passing it to eagerly awaiting nearby hands, shaking the image gently to help "dry" it (to no avail: the image was already dry, and the shaking had no effect whatsoever on the developing process), and waiting patiently (or not) over the image as it gradually took shape over three or four minutes. All of these ceremonially repeated actions are immediately familiar to anyone who has taken "integral" instant pictures, and are essential defining features of Polaroid photography as a form. They also leave only the faintest of traces on the finished print, and are therefore virtually invisible to anyone standing in front of one in a gallery.

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