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Barthes on plastic, or:
the legacy of a synthetic material

Margarete Vöhringer

Almost 70 years after it was written, Roland Barthes' short text "Plastic" continues to show evidence of an astonishing degree of timelessness. Indeed, the manner in which the author reflects upon the synthetic material he describes from the outset as "mysterious" lends his reflections on the history and future of plastic a highly topical quality. At the moment in the 1950s in which Barthes was writing the text, plastic was already more than a hundred years old and had been developed to take on a variety of different shapes and functions and offer ever new forms of application. And it is precisely this simultaneity of the non-simultaneous that Barthes' text brings to light.

History

In the first sentence of his 'mythology', Barthes situates plastic in the context of its supposed historical origin, which lives on in the synthetic material centuries later: "Despite having names of Greek shepherds (Polystyrene, Polyvinyl, Polyethylene), plastic, the products of which have just been gathered in an exhibition, is in essence the stuff of alchemy".¹ Although the author clearly points out the disparity between the Greek nomenclature and the more modern alchemy, he does not provide any further elucidation. For Barthes, plastic had made no noteworthy development prior to the early modern period.

In fact, the earliest evidence for the production of plastic-like artificial substances dates back to the time around 1530, that is, to the heyday of alchemy, when Wolfgang Seidel, a Bavarian Benedictine monk and an author of scientific treatises, acquired from a Swiss merchant a secret recipe that made it possible to produce a "transparent materi".² The artificial cow-horn Seidel subsequently created was more durable than wood, which rotted quickly, and firmer than horn, which tended to bend slightly. The horn also appeared to be relatively easy-to-make, at least compared to the substances used at the time, which included dried lye and diluted ox blood. The horn's base material was skim-milk cheese or goat cheese, and Seidel provided such a precise description of how to make the substance that it can still easily be copied to this day. And, last but not least, Seidel wrote the following (here, too, the early cheese-based material anticipated the later plastic): "If you've made it correctly, you can use it to cast moulds for table tops, drinking vessels and medallions, that is, for everything you want".³

This omnipotence of the artificial material prompted Barthes to dematerialise it, writing that plastic was "more than a substance, [it] is the very idea of its infinite transformation" (97). He also argued that plastic is "a miraculous substance", because "a miracle is always a sudden transformation of nature" (97). In Barthes' time, magic had long since been pushed to the side by the natural sciences. Indeed, in the first half of the 19th century, chemists had replaced alchemists and had started developing new, comparable and often dangerous artificial substances in rapid succession. The processes of industrialisation and mechanisation had led to an increase in knowledge, which was at once protected by the patent system but also made accessible to all. In fact, it was the new manufacturing processes themselves that generated much of the fascination inspired by the new plastics. Chemical reactions were demonstrated at fairs – if not by the inventors themselves, then by showmen – and were usually followed by factual explanations of what might otherwise have been

¹ Roland Barthes. *Mythologies*. The Noonday Press, New York, 1991, p. 97. (All subsequent references to this book will be noted by a page number directly in the text. Unless otherwise indicated, all English other translations are by Margarete Vöhringer and Julie Hagedorn.)

² Udo Tschimmel. *Die Zehntausend-Dollar-Idee. Kunststoff-Geschichte vom Zelluloid zum Superchip* (tr: The ten thousand dollar idea. Plastic history from celluloid to superchip). ECON Verlag, Düsseldorf, 1989, p. 10

³ Ibid, p. 13.

interpreted as supernatural processes.

Still, none of this prevented Barthes from describing the production of plastic as a “magical operation par excellence”, rather than as a rational, comprehensible process (97). It was not the straightforward chemical reactions that fascinated him, but rather the opaque “transmutation of matter” (97). He did not seem to be interested in the quite admirable manner in which plastics were produced, but rather in their impact, that is, in their irrepressible ability to transform. In taking this approach, Barthes captured precisely the spirit of his age. People even waited in long lines to marvel at plastic as a “spectacle” and to see the “ideally-shaped machine” inside of which the mysterious process of plasticisation was taking place (97).

With this last observation, Barthes brings us directly into the 19th century, an era in which people queued up at the entrance to world exhibitions, hoping to see new synthetic materials such as rubber and Parkesine. At that time, the focus was similarly not on the manufacturing process nor on the machines; instead, attention was aimed at the synthetic materials themselves. For example, the so-called “Vulcanite Court” set up at the “Great Exhibition” in London in 1851 was coated entirely with vulcanised rubber and presented in such a way that the objects on display – which were made from the same material – hardly stood out from their backdrop. Among the items that inspired awe among the visitors were rubber walking sticks, rubber musical instruments, rubber furniture, two-metre-wide rubber balloons and an oversized rubber life-raft. While rubber at the time was still made of preserved, vulcanised natural caoutchoua, it would be only ten years until the emergence of Parkesine, the first synthetic material made entirely in a chemical laboratory. In 1862, the inventor of Parkesine, Alexander Parkes, presented the versatile material at London’s “Great International Exhibition” alongside a number of breathtaking promises. He claimed that Parkesine could be used to make, among other things, “medallions, trays, bowls, pots, tubes, buttons, combs, knife handles, [...], card holders, boxes and pens”.⁴ Parkes also claimed that his material could “make ship paint resistant to seawater [and] foster the budding telegraphy industry by protecting [...] its wires against the weather”. And, finally, he noted that Parkesine would be able to “be used to cover art”.⁵ The alchemistic dream of creating a new substance appeared at least partially fulfilled; and this was the case even though plastic was not a living substance, but instead a material that could be shaped only when heated, and one which hardened up as soon as the heat subsided.

Precisely this characteristic of hardening inspired Barthes to observe that plastic “hardly exists as a substance” and that it is “lost between the effusiveness of rubber and the flat hardness of metal” (98). For Parkes, the hardening of the material led to the brittleness that would end up – in spite of his visionary ideas – driving him to ruin. Despite the failure of this new material – a failure that was not uncommon at the time – countless further inventions relating to synthetic materials emerged over the subsequent decades. These included celluloid, Bakelite, polymers, Plexiglas, nylon, perlon and polyester, which would go on to fulfil Parkes’ original ambitions to a significant extent.

By World War II, synthetic materials had established themselves as possessing entirely positive connotations: for example, they became substitute materials for the clothing industry, which was running out of raw materials (for example, polyester replaced silk); they became luxury goods that the growing middle class could afford (for example, celluloid replaced amber); and they became an important part of recreational activities and entertainment (for example, Bakelite was used as the casing for portable radios). And, finally, almost from the beginning, plastic became a way to recycle industrial waste: Parkesine, for example, was made from shredded cotton waste, and Bakelite was made from the phenol contained in the masses of tar left over from the production of coke.

⁴ Ibid, p. 22.

⁵ Ibid, p. 25.

Bakelite was also the first material to earn the title of “plastic”, as it was made entirely from artificial source materials. Leo Hendrik Baekeland had first presented Bakelite to the world in 1909. Up until then, plastic had been made using natural raw materials, such as rubber and cellulose, which were processed and modified to create artificial synthetic materials. Only after that – that is, significantly later than the emergence of the first methods of synthetic material production – did the German term for plastic – *Kunststoff* – emerge in 1911. The term was coined by Richard Escales and made popular by the German-language magazine *Kunststoffe*, which he founded that same year. Escales’ magazine was little more than a promotional catalogue for the latest inventions in the field of synthetic materials production. Still, the international distribution of the magazine ensured that what Barthes called the “reverie of man at the sight of the proliferating forms of matter” (97) would spread across almost the entire world. All the way up until World War II, plastic was seen as an environmentally friendly, democratic and culturally neutral material. In other words, it became appealing to a wide variety of cultures, regardless of their level of modernisation. Even in Africa and distant Siberia, the introduction of plastic products was synonymous with a sense of progress. For example, it gave women more independence, if only because plastic buckets were more affordable, more stable and significantly lighter, which made housework more efficient. The large number of potential uses for plastic was recognised by everyone everywhere at all times, and it was considered to be an attractive material without exception.

Everyday Life

All of this soon changed, however, and it did so at the very moment Barthes’ text first appeared. Plastic is “the first magical substance which consents to be prosaic” (98), he writes towards the end of the essay, in a clear reference to a development set into motion by an American named Earl S. Tupper in 1950, namely the marketing and selling of Tupperware in private homes. While plastic items had been marvelled at for their high scarcity value up until this point, they now underwent the opposite experience; that is, plastic objects that possessed an otherwise ordinary appearance were now suffused with a magical charge. Even though their existence was based entirely on fulfilling a prosaic purpose, and even though this pure functionality meant that they were seen as objects of everyday use (that is to say, not as special-use items), they nevertheless inspired a great degree of fascination. In the case of Tupperware, these everyday objects were not only put to use, they were also admired. In fact, they had an almost irrational impact on the people who consumed them. These people were not satisfied solely with procuring the necessary objects; instead, plastic items were fetishised and became objects of desire. They were no longer offered for sale in public spaces – that is, in retail stores or via catalogues – but instead directly at the site of their use, namely in everyday post-war kitchens and bathrooms. Like an alien invader, Tupperware made its way into the pristine world of modern housewives. In addition to that, a saleswoman named Brownie Wise took charge of marketing duties for Tupperware and introduced her “party plan” system, which managed to kill two birds with one stone; her Tupperware parties provided under-challenged housewives with a form of professional life while also promoting consumption and the management of everyday life. “Plastic has climbed down, it is a household material” (98), Barthes wrote. Millions of women purchased plastic containers that were air-tight, sealable and safe from bacteria. They also bought unbreakable children’s plates. And when confronted with the colourful world of Tupperware goods, they lapsed into a frenzy of euphoria. As a result of this shift in location to the private sphere, the target audience for plastic also changed fundamentally: “At its peak, the Tupperware world was a secret society without men (with the notable exception of Tupper). It was a place where women of skill and ambition could be hard-headed and practical”.⁶

This is perhaps why Barthes introduced the process of plastic manufacturing in his text as a black-box procedure. This is also perhaps why Barthes positioned himself – just like Earl S. Tupper supervising

⁶Stephen Fenichel, *Plastic: The Making of a Synthetic Century*. HarperCollins, 1996, p. 234.

his Tupperware parties – uncomprehendingly next to a machine, whose function he described as “nothing” and “hardly watched over by an attendant in a cloth cap” (97). In the mid-1950s, plastic transformed from a culture-free phenomenon into a very American one. It also changed from being a unique chemical marvel that replaced and/or imitated natural materials to a magically charged and simultaneously trivial mass product. Plastic was magical not only because it enchanted women, but also because – in a quite profane way – it was able to banish bacteria from their fridges.

The thing that interested Barthes first and foremost in this development was the fact that the myth transformed into imitation: “[...] until now imitation materials have always indicated pretension, they belonged to the world of appearances, not to that of actual use; they aimed at reproducing cheaply the rarest substances, diamonds, silk, feathers, furs, silver, all the luxurious brilliance of the world.” (98). The very thing that had made plastic a democratic and environmentally friendly material, namely the reproduction of rare raw materials, now no longer appeared to be the case. Instead of focussing on other materials, plastic developers now focused on their potential uses; instead of focussing on the artful raw material, they now focused on its actual use. As a result, Barthes notes, “for the first time, artifice aims at something common, not rare” (98). Instead of making and distributing jewellery, all kinds of knick-knacks were made and distributed. Although this might appear banal at first, like an obvious development in a process of ever-increasing mass consumption, Barthes sees something significant in it, namely a change with regard to the “function of nature”: “[I]t is no longer the Idea, the pure Substance to be regained or imitated” (98). For Barthes, the popularity of plastic as an object of everyday use was proof that this synthetic material was trying to outperform nature: “Ultimately, objects will be invented for the sole pleasure of using them” (99). Just as there was no model in nature for the countless Tupperware containers with their air-tight lids, there was also no model for all the expensive plastic design objects that began to flood people’s lives in the mid-1950s. Artificial worlds became a reality in the post-war era. And not only that: human beings, too, had become artificial, at least in part. Barthes was both fascinated and irritated by this: “The whole world *can* be plasticised, and even life itself since, we are told, they are beginning to make plastic aortas” (99).

Art

It is interesting to note that alongside this transformation in the idea of life, there was also a corresponding shift in the idea of art. In fact, the materials used in the production of art shifted in a manner that ran parallel to the development of plastics. In the same way that plastic no longer imitated precious raw materials in everyday life in the 1950s – that is, as soon as it no longer functioned as a substitute for special substances and valuable materials – so, too, did these valuable materials begin to appear less and less in art. If certain materials had been used previously in the realm of art on account of their high value and durability, they disappeared from this realm after World War II. At this point, one might have expected that plastic would have managed to replace these materials, seeing as it was certainly the most durable material of the era. However, instead of replacing the valuable materials that were used in the art of the post-war period, plastic instead contributed to the emergence of a brand-new concept of art – one that was less oriented towards material values.

Monika Wagner describes this process in detail in her 2006 essay on material forms. Starting from a system of the arts that ordered artistic categories hierarchically according to the materials used in keeping with the Hegelian system, one moved through a “truth to materials” phase in the 19th century and then to “a vision of overcoming material”⁷ at the beginning of the 20th century. This 20th century vision was one that plastic could have fulfilled in an ideal way. Indeed, it was able to

⁷ Monika Wagner: “Vom Ende der materialgerechten Form” (tr: The end of the truth-to-material form). In: Barbara Naumann/Thomas Strässle/CarolineTorra-Mattenklott (Eds.): *Stoffe. Zur Geschichte der Materialität in Künsten und Wissenschaften* (tr: Materials. On the history of materiality in the arts and sciences). Zürich: vdf Hochschulverlag AG 2006 (= Reihe Zürcher Hochschulforum, Bd. 37), p. 229-246, here p. 235.

imitate a wide array of substances, such as wood and metal. It could be made from chemical compounds that were not always in their final form, but instead could be transformed further into other synthetic materials, for example, when fleece sweaters are made from PET bottles. Plastic was able to change its colour and alternate between being hard or soft. This promise of changeability and the ability to take on the form of a wide variety of objects made plastic appear as a non-material material. And yet, despite this apparent suitability, the boom in synthetic materials in the realm of art – first and foremost in the realm of transparent celluloid – did not continue after World War II. On the contrary, after its triumphal conquest of everyday life by means of Tupperware products, nylon stockings, see-through umbrellas and the like, “the utopian potential of plastics shrank to almost zero”.⁸ Wagner argues that this is what led to the various post-war art movements that dealt with form and material, such as the preoccupation of “Pop Art” artists with everyday culture. In the 1950s, these artists turned away from the abstract avant-garde and towards concrete material objects. This also gave rise to, for example, Wolf Vostell’s *Décoll/agen*, which were taken from the real-life consumer world, and which consisted, at least partly, of plastic items. Claes Oldenburg’s large-scale vinyl sculptures of everyday objects are a further example.

The boom in plastic as an everyday material so aptly described by Barthes in the 1950s had yet another reverberation in art, albeit with a slight delay. As soon as the material form of household goods became plastic – thus laying claim to the ability to last forever – it meant that everyday things suddenly became eternal things. Indeed, if the whole world can be plasticised, as Barthes argued, then there’s not much left for art, that is, except transience and impermanence. The result of this new trend in the 1960s was the emergence of the Fluxus art movement, which had precisely this idea as its starting point. Fluxus artists argued that art should no longer produce grand, long-lasting works, but instead profane, fleeting objects. The result was that everyday objects and consumer goods began to be included in art production, and the mechanisms of art distribution transformed from unique works of art at galleries to transient works of art in small series and short runs. Ephemeral performance pieces were declared works of art, even though some of them left behind merely a photograph of the happening or some other small remnant of the event.

There were two common objectives associated with such attempts to dissolve the boundaries of art and free it from any kind of limitation: first, to link art and life and, second, to prioritise the creative process over the final product. To a certain extent, works of art and profane objects exchanged roles. For example, instead of art, it was the flexible baby food spoon that inspired people’s enthusiasm. Instead of the use of tools, as Marx had prominently postulated, it was the participation in art performance pieces that determined the conditions of production. For example, George Maciunas, one of the central figures behind the Fluxus movement, created handy flux boxes containing numerous plastic objects accompanied by small instruction notes designed to inspire their use. The idea was to prompt an understanding of a technical phenomenon (in this case the film ring) by rebuilding it. In another case, an instruction manual simulated a colour perception experiment; users were instructed to put a blindfold on and touch the colour plastic wrap for as long as it took their hands to learn to distinguish between the colours. In the case of such works of art, the point was less focused on the significant potential of plastic, but instead encouraged audiences to explore its use and impact. Did colour plastic wrap have an effect on hands? As humorous as these instructions may seem, the makers of such art forms had the serious intention of transforming their audiences from uninvolved, non-moving viewers into consciously acting and participating recipients. This form of participation did not as yet exist in the 1960s. Only a decade earlier, when Barthes – a chemistry layman – found himself standing in amazement next to the plastification machine, he sought to draw attention to precisely this fact, that is, to the immense impact that plastic was having at the time and to the fact that there was a fundamental lack of knowledge about its production on the part of his contemporaries. In essence, the Fluxus artists were pursuing an enlightening gesture in their

⁸ Ibid, p. 237.

performances and do-it-yourself objects by trying to point out the hidden processes that made things come into being and prompted them to have an impact.

Afterlife

The fact that Barthes was highly critical of what he saw as a passive mode of reception is shown in yet another text contained in *Mythologies* in which plastic plays a role. The text is called “Toys” and does not concern adult consumers, but rather children, who, Barthes argues, are being given miniaturised toy products drawn from the world of adults instead of being expected to create and play with their own toys themselves:

However, faced with this world of faithful and complicated objects, the child can only identify himself as owner, as user, never as creator; he does not invent the world, he uses it [...]. He is turned into a little stay-at-home householder who does not even have to invent the mainsprings of adult causality.” (54)

Among the various replicas of the adult world that are being designed for children, Barthes casts a particularly negative light on plastic products. For him, the introduction of plastic into the child’s world is a symptom of the “bourgeois status of the toy” (54). Whereas in his “Plastic” text, Barthes had written about plastic with a touch of irony, oscillating between a degree of fascination with the material and a slightly derogatory take-down, in the “Toys” text, he leaves no doubt as to where his preference lies: “[T]he plastic material of which they are made has an appearance at once gross and hygienic, it destroys all the pleasure, the sweetness, the humanity of touch”. (54). He also characterises plastic as having the “chemical coldness of metal” with “angles which are too sharp” (54). Barthes contrasts this coldness with the “warmth” of wood, which he admires extensively: “[W]ood [is an] ideal material because of its firmness and its softness, and the natural warmth of its touch” (54). Wood, according to Barthes, “has a sound at once muffled and sharp” (54), while plastic, as mentioned in the Plastic essay, is “at once hollow and flat” (98). Here it becomes unmistakably clear which side the author is on. The fact that this position seems almost ideological, and is not necessarily understandable, is confirmed in the final words of the essay: “These toys die in fact very quickly, and once dead, they have no posthumous life for the child” (55).

Still, the idea that plastic might indeed have a very long afterlife for adults is exactly what Barthes proposes at the end of his “Plastic” essay: “The hierarchy of substances is abolished; a single one replaces them all” (99). Today, almost seventy years after the publication of *Mythologies*, there are now countless petroleum-based plastics, such as Teflon, polystyrene, polyamide, polyurethane, polypropylene, PVC and PET used in a variety of industries, including the packaging, construction, automobile, electronics, furniture and agricultural industries, as well as in homes and the medical field.⁹ In fact, plastic is also omnipresent in the material sense as well. The best-known example is probably the discovery of a current area in the Pacific, referred to as the “Great Pacific Garbage Patch”, where the water vortices “circulate gigantic amounts of plastic as much as 30 metres in depth”.¹⁰ There are even car tyres lying at the bottom of the ocean. A sunken freight ship containing plastic toys from China contributed to the occurrence of this material in the Atlantic Ocean. But that’s not all. Indeed, plastic parts do not decompose into biodegradable substances over time; instead, they “are merely broken down into ever-smaller components by means of friction and light”, so that there is hardly a cubic metre of water in the oceans that contains no plastic.¹¹ In addition to that, plastic is also capable of making its way through the food chain all the way to our dinner plates;

⁹ Laura Hennemann / Cyprian Lothringer: Alles Plastik. (tr: All plastic). In: *Die Zeit* Nr. 45, Oct. 31, 2012, p. 39

¹⁰ Karin Schulze: “Friedhof der Plastiktiere. Meeres-Müll im Museum”. (tr: Cemetery of plastic animals. Marine garbage in the museum.) Spiegel Online, Dec. 19, 2012, <http://www.spiegel.de/kultur/gesellschaft/endstation-meer-das-plastikmuellprojekt-ausstellung-in-hamburg-a-873623.html>. Dec. 19. 2012. Accessed: June 3, 2014.

¹¹ Ibid.

for example, when people eat muscles, they are also consuming plastic, seeing as muscles store PET particles in their tissue. The fact that these and other marine animals suffer from such plastic waste is one thing; the fact that we humans can hardly protect ourselves from a plastic invasion is the other dramatic side of the use of this inexpensive, light and variable material. Toxins harmful to humans stick to plastics, and they can disrupt the hormonal balance of human beings, among many other things. Every time we wash a fleece sweater, for example, up to 1,900 small fibres dissolve and spread out via the rest of the clothing on our skin. Peeling creams with tiny polyethylene balls also penetrate our skin.¹²

And, of course, Barthes' premonition that we would soon be making plastic aortas has also proven to be quite prescient. By the end of the 20th century, countless plastic organs had indeed already been developed and implanted into human bodies. As seen from this perspective, plastic is no longer merely a human-manufactured synthetic material; instead, it can now be seen as leading a life of its own. It transforms itself, it imitates human life and it makes people happy. It is also dangerous, because it forms part of the environment from which it is made and at the same time threatens that very same environment. It changes itself in history and is perpetually infused with new ideas. It is also able to penetrate bodies and change our nature. In the sense that Barthes put forward, plastic is the mythical object par excellence, because it points to the artificiality even of those things we consider to be most natural, namely our own bodies. And it would appear that this process – at least since the era in which Barthes wrote about it in such a timeless way – has not really come to an end, even in spite of all its historicity. Today, we are *never not* in the possession or in the presence of plastic.

The Russian language has a different way of describing something that one owns, something that is one's own property: for example, one doesn't say "I have a plastic bowl", but instead "plastic bowl is with me". This is perhaps the best possible description of our relationship to plastic in the 21st century. Indeed, even if and when we no longer want to have plastic, and even when we no longer produce it, it will still be with us.

¹² Ibid. and Axel Bojanowski: "Internes Regierungspapier: Staaten versagen endgültig beim Meeresschutz" (Internal government paper: States finally fail to protect the sea), Feb. 4, 2010, <http://www.spiegel.de/wissenschaft/natur/internes-regierungspapier-staaten-versagen-endgueltig-beim-meeresschutz-a-675899.html>. Feb. 4, 2010. Accessed: June 3, 2014.