

A Thousand Needles. A Rediscovered Innovation in Textiles.

Markéta Vinglerová

Curator of the Textile Collection, Museum of Decorative Arts in Prague

Translated by: Erik Piper

Abstract:

In the late 1950s, a nonwoven technology was developed at the Wool Research Institute in Brno, Czechoslovakia, that enabled mundane materials to serve in the production of warm, yet light winter clothing. Thus Protis was born, and Czechoslovakia then had this textile patented in twelve countries. What the researchers did not expect, however, is the high demand their technology would see in the arts. Above all "Art Protis" quickly became a nearly essential part of many public spaces, and a popular home decoration. But its affordability and relative ease and speed of execution compared to traditional woven tapestries led to overproduction and a corresponding lack of quality in the 1970s and 1980s. This produced a situation where these and similar nonwoven textile technologies have nearly vanished from the public consciousness. And yet we can also find an interest in their visuality and innovative potential among the very youngest artists.

Contents:

Two-layer Warmth / Not One Technology, but Three / The Art Protis Boom / The Pitfalls of Art Protis / The Rebirth of Art Protis / Closing Words

Two-layer Warmth

When the researchers at the Wool Research Institute¹ in Brno, the second-largest city in the former Czechoslovakia, developed a new textile technology, Protis, in the late 1950s, they could hardly suspect that a material that would influence textile art for a long time to come was being shaped within their hands. Protis was originally intended for ladies' jackets and outerwear. The warm coats of the 1950s were far removed from the polyester jackets insulated with down or hollow fibers that we wear today. They were thick-woven and very, very heavy. The researchers' task, then, was to develop a material that would be warm yet light, and also easy to care for.

The textile engineers František Pohl, Václav Skála, and Jiří Haluza presented a two-layer material that they called Protis, made partly of woolen, fairly sparse and loose fabric, and partly of loose-fill fleece. Its two elements were joined using stitching equipment similar to a knitting machine, where these two layers are fed to a cylindrical mechanism to be stitched together, or more precisely knitted together. The machine's output is a joined two-layer nonwoven textile. Protis, manufactured at Vlněna, a Brno-based state enterprise, was placed on the market in 1963, and it then began to be used in the production of ladies' and girls' coats and men's jackets at the plants of several national clothing enterprises (e.g. at Makytě Půchov in Slovakia). Their main pluses were their lightness and low cost of production; meanwhile, they were distinctively warm and didn't need ironing!

¹ "Scientific and innovative Institute, founded in 1949 and supported by Ministry of Light Industry, was focused on research of new procedures and experiments for woven industry, both textiles and fashion, research and utilization of domestic raw materials, synthetic fibres, new materials, improvements in the existing weaving and knitting machines." (cited from <http://www.vup.cz/cs/menu/about-us>, the website of the Institute's modern-day successor)



Figure 1: Woman in a Protis coat (Mrs. Kulišková), 1960s. The Světlana Kulišková Ruggiero Archives.

For some time, Protis completely squeezed out the usual production of woven materials at Vlněna, but interest in it then gradually dropped until its production needed to be reduced². Meanwhile, by 1963, the Wool Research Institute had managed to patent Protis as an original Czechoslovak textile technology. For the nation's foreign-trade agents, it briefly promised an influx of badly needed hard currency. However, market research ultimately showed no major interest in it, and Czechoslovak Patent 107-159 was only maintained abroad for ten years.³

Not One Technology, but Three

For completeness we must note that Protis developed into several variants, and it did so in three places. Firstly, at the mentioned Vlněna plant in Brno, Protis goods were produced on a German Maliwatt machine and “zigzag” stitching was used; this technology was also supplemented by a variant of the Arteig nonwoven fabric, which joined the two layers by merely sending a thread through them with a needle. Liberec, in North Bohemia, held another production center, where the “Flordecor” nonwoven fabric, composed of two layers, was developed in parallel at the State Textile Research Institute, on a Czechoslovak Arachne machine. Here the thread was run through straight. Last but not least, in western Bohemia, at the Elitex, national enterprise, machine works in Kdyně, the related “Aradecor” technology was developed on an Ara Beva machine, a relative of the Arachne. Here the two layers were joined without stitching, via a clever threading of the fleece's fibers through the base textile.

² According to one technical and financial evaluation of Protis production, Vlněna produced 40,000 linear meters of it in 1963, its year of introduction, and produced 70,000 linear meters in 1964. In 1966, 192,292 meters were produced, while in 1967, Protis production peaked, reaching 244,153 meters; for 1968, 37,000 meters are on record. As interest declined, production declined as well. See Moravian Provincial Archive in Brno, archive K 216, Vlněna, vlnářské závody, s. p., Brno, box 77, inv. unit. 3.

³ This patent was granted in France, Belgium, Great Britain, Sweden, Switzerland, Australia, Spain, Austria, India, both Germanies, and Canada. It was rejected in Japan, and withdrawn in the Netherlands.

But it was the production center at Brno's Vlněna plant, where an East-German Maliwatt machine was used, that achieved the greatest fame. Even though the production of Protis for use in clothing gradually declined, the technology itself took on a second wind in the second half of the 1960s. First, a new designation for its use was found: "textiles for decoration, residential, and similar purposes." Then, quite soon afterwards—in 1965—we can find the first mentions of the name "Art Protis." In 1966, an Art Protis workshop was founded at the Vlněna factory; besides suitable spaces, it also had access to non-Protis technologies such as those for yarn carding, fiber enrichment, and fleece production.

Planned cooperation with the textile department of the School of Applied Arts in Brno also served as an argument to draw artists towards this workshop. Art Protis represented an application of an original technology—the nonwoven two-layer Protis—to the textile arts, which were experiencing a renaissance in this period⁴. Fleece of a variety of colors and density was fastened onto a base of an arbitrary length. (The width—up to 250 cm—was given by the capabilities of the machine.) In some cases it was joined by metallized foils and other textile fibers. The compositions were fixed in place via machine stitching throughout their surfaces—in Brno, this was done using the above-mentioned Maliwatt



Figure 2: Stitching on a Maliwatt machine using the Protis technology. Photo: Karolína Juříková, 2015.

⁴ We can justifiably speak of a worldwide renaissance of the tapestry in connection with the increased interest in them after World War II, which led to the establishment of large, regular exhibition projects—especially the International Tapestry Biennial in Lausanne in 1962, and ten years later the International Tapestry Biennial in Łódź. The striking works of Polish artists, especially Magdalena Abakanowicz, served as major examples for others. The prestige of Polish tapestries, and textile art overall, was also amplified by the important Wall Hangings textile exhibition at New York's Museum of Modern Art in 1969.

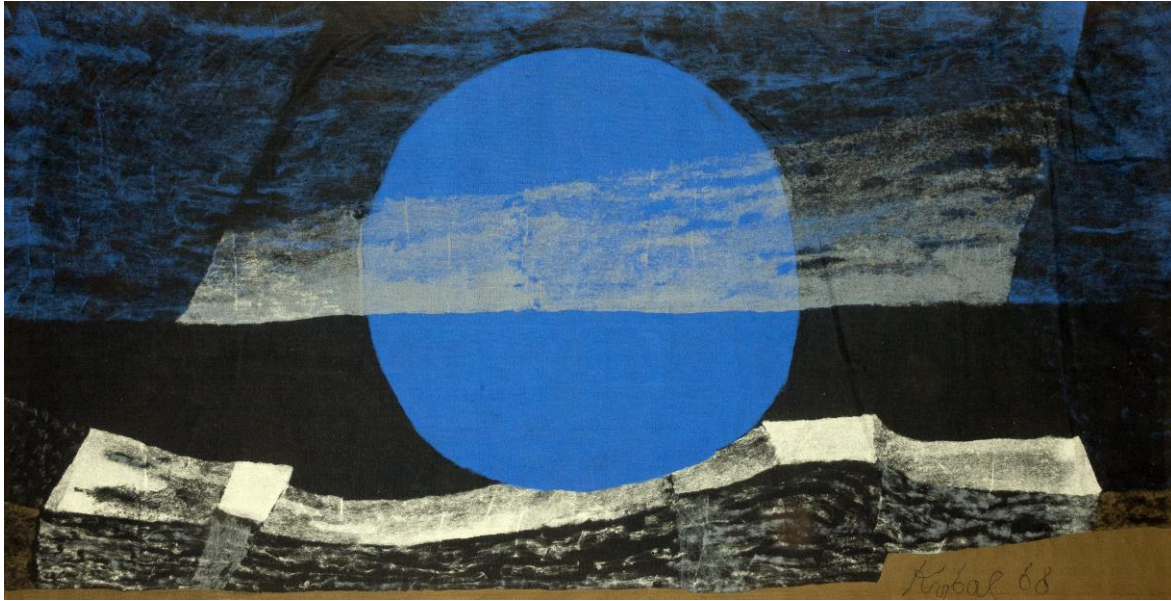


Figure 3: Antonín Kybal, “Spící Menhir” (Sleeping Menhir), 1968, Art Protis, 192 x 400 cm, UPM inv. no. 85,791. Photo: Ondřej Kocourek.

Prominent textile artists such as Antonín Kybal (a professor at the Academy of Arts, Architecture and design in Prague) and his colleague Alois Fišárek emphasized the advantages of Art Protis. These two artists, together with e.g. Josef Liesler, the internationally renowned Jiří Trnka, and the Brno artist Inez Tuschnerová, were among the first to try out and promote Art Protis. This technology’s potential was often compared to that of painting, and meanwhile the style that it offered was compared to the era’s *Art Informel*. Art Protis was to become “the new tapestry”: as Inez Tuschnerová notes in one interview, “(...) this entire technology arose not as an imitation of the tapestry, or an imitation of the painting, but as a unit of its own. It was here to serve architecture (...)”⁵. Unlike large woven tapestries, which regularly took up to a year to create, an Art Protis in the same format could be produced within a few weeks. This process with minimal time demands was further amplified by its affordability.

The Art Protis Boom

Art Protis was soon to be found in many meeting rooms of District National Committees, wedding halls, and hotel foyers, and it also very soon found its way (in smaller formats) to residential interiors. Not only did countless Czechoslovak textile artists travel to Brno to implement their designs, but also, thanks to state-support promotion by the Rapid advertising agency, awareness of Art Protis gradually also permeated abroad—and even into Western Europe. The Rapid Advertising Agency offered interested parties all needed services and consulting, and with its flyers full of sensationalist texts, it presented the Czechoslovak patent in the most lavish of lights. Unlike Protis itself, these new tapestries did provide hard currency for the State’s coffers. The world-renowned French artist and journalist Jean Effel traveled to Brno to execute his Art Protis works, as did the Soviet painter Andrei Konstantinovich Sokolov, a friend to the cosmonaut and general Alexej Leonov (and indeed, a Sokolov work depicted the Apollo-Soyuz Test Project).

⁵ Inez Tuschnerová cooperated with the Wool Research Institute in Brno from 1964 forwards. See Březinová and Zapletal, *Rozhovor Andrey Březinové a Tomáše Zapletala s Inez Tuschnerovou v srpnu 2014 v Brně*, 172.

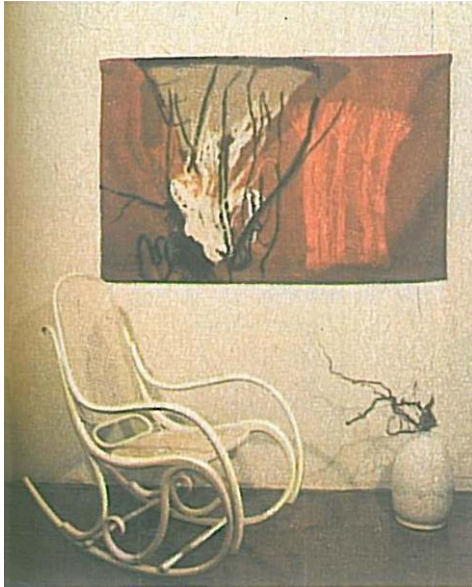


Figure 4: Andrei Konstantinovich Sokolov, "Soyuz and Apollo," reproduced in a flyer from Rapid Advertising Agency (a Czechoslovak advertising agency), 1980s.

In the 1970s, the important Filipino artist Aguilar Alcuaz came here repeatedly to create literally several hundred (!) monumental Art Protis compositions. The two other studios, in the north and west of Bohemia—in Liberec and in Kdyně—remained “backwaters” of nonwoven art; nevertheless, artists traveled to them as well, to utilize the specific possibilities of the Arachne-family machines used there. Kdyně saw regular production by Inez Tuschnerová and especially Běla Suchá, and Czech painters such as Richard Fremund and Josef Liesler experimented here in the 1970s with this new means of expression. Starting from the technology’s creation in the mid-1960s, exhibitions by Art Protis creators were held throughout the republic—both exhibition by individuals and large retrospectives. Several prestigious exhibitions were held abroad as well.⁶

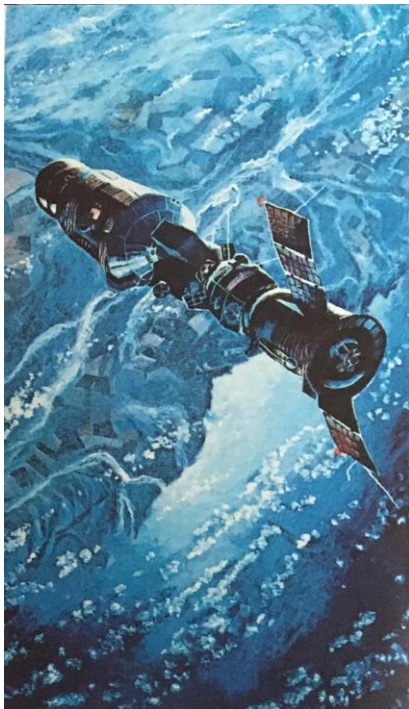


Figure 5: Richard Fremund, Untitled, Aradecor 106 x 147 cm, 1975. Archives of the sam83 gallery

⁶ In the 1970s, in Pully, Switzerland and in London, England (the archives do not state precise dates).

The Pitfalls of Art Protis

While Art Protis was original and full of possibilities, these were not enough to guarantee that every work would contain artistic value. The technology presented significant pitfalls, lying mainly in the mentioned speed and low production costs of the creation process, and in the limited nature of its means of expression. Unfortunately, in the end quantity outshouted quality, and this promising technology with great ambitions was devalued to the very limits what was bearable: while in 1967, Art Protis was presented by Mr. and Mrs. Kybal with great excitement at the Montreal Expo, while it saw great success at the Cannes film festival, and won further awards at the *Bienále tapisserie* in Lausanne (1969 and 1971), at the International Arts and Crafts Fair in Munich in 1966, and at the *Mostra Internazionale Arredamento* international design exhibition in Monza—with Art Protis winning first place at the latter two events—starting in the mid-1970s, we see these works en masse taking merely the silver, the bronze, or even less, unavoidably connecting this technology in the public’s minds with gaudiness, kitsch, and “normalization”⁷ aesthetics.



Figure 6: Marie Helena Štecherová, Art Protis tapestry *White Flame* from 1967 in a period interior, reproduced from *Domov* magazine VII, 1975, p. 27.

As early as in 1965, the above-mentioned Prague university professor Antonín Kybal speaks with reserve in his text on this technology; he emphasizes the danger of a shallow turn towards decorativeness and cheap effects, “which can lead, after the exhaustion of its novelty, as far as its irreversible disappearance from the list of tapestry techniques.”⁸ This despite his also having himself created a number of high-quality Art Protis works and his being among its main promoters and defenders from the very start, who also proclaimed: “There are textiles that are used to reproduce patterns—and there are textiles that live through their own capability for expression. Art Protis works belong among the latter⁹.”

⁷ “Normalization” refers to the period after the 1968 Warsaw Pact invasion of Czechoslovakia, in order to suppress the nation’s “Prague Spring” period of political liberalization. Normalization was marked by repression from the state apparatus, by renewed censorship, and in the official arts, by the return of topics connected with the aesthetics of Communist propaganda, at the expense of artistic innovation.

⁸ Kybal, *Tapisserie Art Protis*, 3.

⁹ Kybal, *Výstava moderní tapisserie Art Protis let 1968–1970*, unnumbered.

But how did it come to pass that this promising technology with great ambitions was devalued to the very limits of what was bearable? We believe that alongside the qualitative devaluation wherein works of low quality were produced in very large quantities and very quickly, the era in which Art Protis sought its footing bears some of the blame. This new technology “applied” outside of the applied arts, one that had no direct link to our prewar textile tradition, was developed purely within the environment of research institutes, with massive support from the Communist establishment. Art Protis slowly but surely became a subservient element of the culture of Communist Czechoslovakia, and it often resonated with that culture’s propaganda through its motifs. A certain ideological burden in textile art thus went hand in hand with fluctuations in its artistic quality as well, and meanwhile its affordability enabled a massive spread among the broadest layers of the public.

The whole situation was “aided” by the 1965 Construction Act of the Czechoslovak Republic, which set a budgeting percentage for artistic decoration, with 1%, and in exceptional cases up to 4%, of the overall budgets of newly constructed public buildings being devoted to artworks¹⁰. Designer woven tapestries, and later nonwoven textile works, i.e. Art Protis, Aradecor, and Flordecor, found a place as decorations for wedding halls, District National Committees, hotel banquet halls, embassies, and other spaces. Textiles, alongside decorative sculptures and paintings, were among the distinctive artistic aspects of the era’s interiors. And at the height of their boom, these works, just like decorative paintings, sculptures, etc., had to respect the ideological opinions of Communist art committees.

After 1989, the unmaintained and now-dusty Art Protis tapestries disappeared from many public spaces, and this technology gradually faded from the public consciousness—with the situation in the textile industry during the economic transformation that occurred in the Czechoslovakia and the Czech Republic of the 1990s also playing a role in it all. Within this transformation, the majority of textile factories went bankrupt due to fraud-ridden privatization processes, and also due to the overall collapse of European textile manufacturing. This process eventually saw the death of the Art Protis studio at Vlněna as well.

The Rebirth of Art Protis

It is very difficult today to convince those who witnessed this withering-out that Art Protis is a technology of indubitable value that can offer more than a dusty, faded “normalization” aftertaste. But in recent years, distance and “visual respite” have helped Art Protis to at least partially regain its lost position—within the milieu of the youngest artistic generation. And not just Art Protis; Aradecor is being “dusted off” as well. The potential for expression in these innovative technologies has helped both Art Protis and Aradecor to at least partially regain their lost position in recent years within the Czech Republic. On the one hand, we see individual artists such as the textile artist Světlana Kulíšková Ruggiero, who, besides her work outside the applied arts (Arazzi Art Protis) also produces Art Protis textile samplers (e.g. Tessuti Arakne and Arazzi Arakne), several of which have been used for the collections of such fashion houses as Calvin Klein, Jil Sander, Prada, and Marc Jacobs¹¹. Alongside her we find Karolína Juříková, a recent graduate of the Liběna Rochová Clothing and Footwear Studio at The Academy of Arts, Architecture and Design in Prague, who latest two successful fashion collections (spring/summer 2015 and spring/summer 2016) incorporate Art Protis works that she prepared with her own hands.

¹⁰ Chapter V of the Construction Act, in force from 1965. See Karous, *Vetřelci a volavky. Atlas výtvarného umění ve veřejném prostoru v Československu v období normalizace 1968–1989*, 80.

¹¹ See: Kulíšková and Juříková, *Art Protis a oděv. Dialog mezi textilní výtvarnicí a designérkou Světlanou Kulíškovou a studentkou diplomového ročníku UMPRUM v Praze Karolínou Juříkovou o minulosti a budoucnosti české techniky Art Protis ve spojení s oděvem*, 193–199.



Figure 7: Karolina Juříková, Asymmetrical dress, spring/summer 2016 collection, wool. Museum of Decorative Arts in Prague, DE 1299/3. The Karolina Juříková archive; photo: Petr Jandera.

Another Academy graduate, Mia Jadrná, has gone on to push Art Protis in the direction of recycling. In her Postkompost Trauma Couture SS/2017 collection, she innovatively stitched material from the cutting-room floor, rather than fleece. In all of these cases, the current rising generation has created unique models through which it is reinterpreting a textile technology over half a century old.



Figure 8: Mia Jadrná, Top, Postkompost Trauma Couture spring/summer 2017 collection, recycled textiles. The Mia Jadrná archive; photo: Mia Jadrná.

The visual artist Daniel Vlček is bringing Art Protis back to art in a recent post-internet installation as well.



Figure 9: Daniel Vlček, Akustické řešení [Acoustic Solution], 2017, digital printing on paper, colored wool, polyester, 220 x 330 cm, property of the artist; photo: Ondřej Polák

And on the other hand, galleries are taking action here as well, such as the sam83 gallery in Česká Bříza. As a platform for contemporary art, it runs a number of social projects, and within these it organizes residencies and symposiums for contemporary artists focused on the Aradecor technology, with past participation for example by Anežka Hošková and Daniel Vlček—both mentioned above in our text.



Figure 10: Anežka Hošková, Untitled, Aradecor, Untitled, 100 x 100 cm, 2015; photo: Anežka Hošková, Archives of the artist.

All this does nothing to change the fact that Aradecor, Flordecor, and Art Protis are under threat. After all, the history of these three experimental technologies only survives in this country thanks to the enthusiasm of a handful of people.

Closing Words

But recently it seems that Art Protis, as well as Aradecor and perhaps in the future Flordecor as well, may find a firm place in the work of contemporary artists and designers, including the youngest generation. Today we are all witnesses to an increased interest in textile art, whose expressions are often integrated into large international revues—but also form a part of smaller exhibition projects covering particular aspects of textiles, their social and historical context, manufacturing processes, etc. In the future, it would be very fruitful to present a critical overview of the nonwoven technologies developed using Protis and provide a new look at it, including a survey of the circumstances of its birth and the problematicness of Art Protis' position within Communist-era fine arts, while also showing the possible direction for its use in the present.

References:

Archival sources:

Moravian Provincial Archive, archive K 216 Vlněna, vlnářské závody, s. p. Brno, boxes 12, 74, 77, 107, 234, 342, 355, and 508.

Literature:

Březinová, Andrea and Zapletal, Tomáš, "Rozhovor Andrey Březinové a Tomáše Zapletala s Inez Tuschnerovou v srpnu 2014 v Brně," In: *Bulletin Moravské galerie*, edited by Andrea Březinová, Brno: Moravská galerie, 2014, no. 70, 170–177. ISSN 0231-5793.

Karous, Pavel, ed. *Vetřelci a volavky. Atlas výtvarného umění ve veřejném prostoru v Československu v období normalizace 1968–1989*. Praha: Pavel Karous, 2015.

Knobloch, Pavel. "Art Protis – The Czechoslovak Woolen Industry presents Artists with a New Technique." *SNTL, Technical Digest*, no. 1 (1967): 50–52.

Kulíšková, Světlana and Juříková, Karolína, "Art Protis a oděv. Dialog mezi textilní výtvarnicí a designérkou Světlanou Kulíškovou a studentkou diplomového ročníku UMPRUM v Praze Karolínou Juříkovou o minulosti a budoucnosti české techniky Art Protis ve spojení s oděvem," In: *Bulletin Moravské galerie*, edited by Andrea Březinová, Brno: Moravská galerie, 2014, no. 70, 192–199. ISSN 0231-5793.

Mertová, Petra, "Art Protis – československý zázrak," In: *Věda a technika v Československu v 60. letech 20. století*, edited by Ivana Lorencová and Michal Novotný, 275 - 283. Praha: Národní technické muzeum v Praze, 2011. ISBN 978-80-7037-203-6.

Markéta Vinglerová, "Cesta k nové tapiserii. Od Protisu k Art Protisu, Aradecoru a Flordecoru," *Textil v muzeu / Historie a inspirace textilní průmyslové výroby a módní trendy 17 (2017)*: 36 - 48.

Exhibitions and Symposiums:

Kybal, Antonín: *Moderní tapiserie Art protis 1968–1970* (exhibition catalogue). Karlovy Vary, Liberec: Oblastní galerie v Liberci, Galerie umění Karlovy Vary, 1971.

Kybal, Antonín: *Tapiserie – Artprotis* (exhibition catalogue). Louny: Galerie Benedikta Rejta v Lounech, 1973.

Mertová Petra: *Art protis 45*. Exhibition text. Technické muzeum v Brně, 2009.

Vinglerová, Markéta: Co je textilní umění. In: Bytelová, Denisa; Sam; Vinglerová, Markéta: *Aradecor 1966–2016* (exhibition catalogue). Česká Bříza: culture83 a galerie sam83, 2016. ISBN 978–80–87566–28–2.