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"Art, Industrial Design, Science and Popular Culture: Modernism and Cross-disciplinarity in Italy and Great Britain, 1948-1963"

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Abstract

Conceived inside a chronological frame, which starts in 1948, the year the Institute of Contemporary Arts in London founded, and ends in 1963, when Gillo Dorfles wrote a crucial essay on industrial design, concluding more than a decade of discussions, the thesis aims to examine some artistic and cultural phenomena identified in Italy and Great Britain, and seen as the acknowledgement or as the reaction to modernity. Topics and fields taken in consideration within the thesis are technology, science (fact and fiction), vision of the future, the relationship between arts and the awareness of industrial design as a new discipline. All these aspects, that might seems unusual in relationship with visual arts, are perceived as the expression of a second phase of Modernism.

The British personalities included in the thesis are Reyner Banham, Richard Hamilton, Nigel Henderson, John McHale, Eduardo Paolozzi, Alison and Peter Smithson, all members of the Independent Group. With the presence of architects, visual artists, photographers, critics and, in a broader sense, designers, the group encompassed a variety of popular interests, with the inclusion of mass-produced goods. The Italian figures presented in the thesis – Gillo Dorfles, Bruno Munari, Ettore Sottsass and Giuseppe Pinot-Gallizio – focused on industrial design objects, viewed as a new artistic branch, to promote, to plan or to question. Other recurring figures analysed in the thesis are Max Bill, Asger Jorn and Tomás Maldonado, who give international connections to the themes and British and Italian personalities examined.

In order to provide a wider understanding of the 1950s and their crucial function in the story of post-war Europe, the thesis aims to emphasise the role played at different level by British

and Italian visual artists, designers and critics, and explain the reasons that, in the following decade, would push Italy in its industrial miracle and Great Britain at the peak for its popular culture, pop music and fashion creativity.

List of illustrations

Fig. 11, Exhibition catalogue for "Parallel of Life and Art", Institute of Contemporary Arts, London 1953 (A. Massey and G. Muir, *Institute of Contemporary Arts: 1946–1968*, op. cit., p. 90).

Fig. 12, "Parallel of Life and Art", installation view (A. Massey and G. Muir, *Institute of Contemporary Arts: 1946–1968*, op. cit., p. 92).

Fig. 13, J. Breitenbach, Pattern of coffee bean fragrance, 1940 (L. Moholy-Nagy, *Vision in Motion*, Paul Theobald, Chicago 1947, p. 182).

Fig. 14, T. Eakins, Action photo, 1881-1884 (L. Moholy-Nagy, *Vision in Motion*, op. cit., p. 248).

Fig. 15, R. Samuel, Aereal view, 1944 (L. Moholy-Nagy, *Vision in Motion*, op. cit., p. 40).

Fig. 16, André Malraux in his flat in Paris, photograph by Maurice Jarnoux for "Paris Match", 1953 (Walsh, V. *Nigel Henderson. Parallel of Life and Art*, exh. cat., Suffolk, 27 September–25 November 2002, p. 92).

Fig. 17, "Parallel of Life and Art", installation view (A. Massey and G. Muir, *Institute of Contemporary Arts: 1946–1968*, op. cit., p. 89).

Fig. 18, "Man, Machine and Motion", installation view, Institute of Contemporary Arts, London 1955 (M. Godfrey, P. Schimmel, V. Todolí, *Richard Hamilton*, exh. cat., Tate Modern, London, 13 February – 26 May 2014, p. 45).

Fig. 19, Panel from "Man, Machine and Motion", recto (http://www.christies.com/lotfinder/paintings/richard-hamilton-untitled-5768334-details.aspx).

Fig. 20, Panel from "Man, Machine and Motion", verso (http://www.christies.com/lotfinder/paintings/richard-hamilton-untitled-5768334-details.aspx).

Fig. 21, Private view card for "Man, Machine and Motion" (A. Massey and G. Muir, *Institute of Contemporary Arts: 1946–1968*, op. cit., p. 111).

Fig. 22, Le Corbusier along with Le Modulor's panel exhibited at "Mostra di Studi sulle proporzioni", IX Triennale, Milan 1951 (A. C. Cimoli and F. Irace, *La Divina Proporzione. Triennale 1951*, Electa, Milan 2007, p. 176).

Fig. 23, Le Corbusier, scheme of Le Modulor (A. C. Cimoli and F. Irace, *La Divina Proporzione. Triennale 1951*, op. cit., p. 30).

Fig. 24, "Mostra di Studi sulle proporzioni", installation view (A. C. Cimoli and F. Irace, *La Divina Proporzione. Triennale 1951*, op. cit., p. 245).

Fig. 25, Poster for "Riders to the Stars", 1954 (https://en.wikipedia.org/wiki/Riders_to_the_Stars#/media/File:Poster_of_the_movie_Riders_to_the_Stars.jpg).

Fig. 26, William Lundigam (Dr. Richard Stanton) in "Riders to the Stars" (http://celluloidclub.blogspot.it/2013_04_01_archive.html).

Fig. 27, Poster for "Creature from the Black Lagoon", 1954 (https://en.wikipedia.org/wiki/Creature_from_the_Black_Lagoon).

Fig. 28, The creature and Julia Adams (Kay Lawrence) in "Creature from the Black Lagoon", 1954 (http://flickeringscreen.net/2013/11/01/it-came-from-well-really-bad-science-creature-from-the-black-lagoon/).

Fig. 29, Citroën DS at the XI Triennale, Milan 1957, © Archivio Storico La Triennale di Milano (http://www.triennale.org/it/archivio-fotografico/esposizione/22750-xitrn?cat=22808).

Fig. 30, Terry Hamilton in the *Gallery for a Collector of Brutalist and Tachiste Art* at the *Daily Mail's ideal Home Exhibition*, 1958 © Richard Hamilton (B. Highmore, "Richard Hamilton at the *Ideal Home Exhibition* of 1958: Gallery for a Collector of Brutalist and Tachiste Art", in *Art History*, Vol. 30, No. 5, November 2007, p. 713.)

Fig. 31, The Smithsons' Citroën DS in front of Upper Lawn Pavilion, 1961 (D. Van den Heuvel and M. Risselada (eds), *Alison and Peter Smithson – from the House of the Future to a house of today*, op. cit., p. 35).

Fig. 32, Cover and page from A. Smithson, "AS in DS. An Eye on the Road", Delft University Press, Delft 1983.

Fig. 33, R. Hamilton, "Hommage à Chrisler Corp.", oil, metal foil and collage on panel, 122 x 81 cm., 1957, Tate, London (M. Godfrey, P. Schimmel, V. Todolí, *Richard Hamilton*, op. cit., p. 77).

Fig. 34, R. Hamilton, "$he", oil, cellulose and collage on panel,

122 x 81 cm., 1958-61, Tate, London (M. Godfrey, P. Schimmel, V. Todolí, *Richard Hamilton*, cit., p. 81).

Fig. 35, R. Hamilton, "Chiara & chair", inkjet digital print, 2004, Tate, London (M. Godfrey, P. Schimmel, V. Todolí, *Richard Hamilton*, cit., p. 299).

Fig. 36, "Useless Machine for Max Bill", tempera on cardboard, wiry and wood, 80 x 40 cm, 1951-1993 (http://www.munart.org/index.php?p=9).

Fig. 37, B. Munari, "Useless Machine", aluminium, squash shell and wood, 1934 (Hájek M. and Zafferano L. (eds), *Bruno Munari. My Futurist Past*, exh. cat., Estorick Collection, London 19 September – 23 December 2012, p. 39).

Fig. 38, B. Munari, "Useless Machine", aluminium, 1956-1968 (Hájek M. and Zafferano L. (eds), *Bruno Munari. My Futurist Past*, op. cit., p. 61).

Fig. 39/40, Westinghouse Ads featuring The Middleton Family, 1939 (http://boom-pop.blogspot.it/2010/04/youll-remember-westinghouse-building-as.html http://boingboing.net/2011/05/25/westinghouse-1939-wo.html).

Fig. 41, "New York World's Fair Comics", cover, 1940 (http://dc.wikia.com/wiki/New_York_World's_Fair_Comics_Vol_1_2).

Fig. 42, The Trylon and the Perisphere at the New York World's Fair, 1939 (http://www.wired.com/2010/04/gallery-1939-worlds-fair/).

Fig. 43, The Skylon tower and the Dome, South Bank, Festival of Britain, 1951 (http://www.skibbereeneagle.ie/architecture/60th-anniversary-of-festival-of-britain/).

Fig. 44, "This is Tomorrow, Group 2", installation view, Whitechapel Art Gallery, London 1956 (M. Godfrey, P. Schimmel, V. Todolí, *Richard Hamilton*, op. cit., p. 51).

Fig. 45, Poster for "Forbidden Planet", 1956 (D. Robbins, (ed.) *The Independent Group: Post-War Britain and the Aesthetics of Plenty*, exh. cat., ICA, London 1990, p. 60).

Fig. 46, "This is Tomorrow, Group 6, Patio and Pavilion", installation view, Whitechapel Art Gallery, London 1956

(Walsh, V. *Nigel Henderson. Parallel of Life and Art*, op. cit., p. 117).

Fig. 47, "Patio and Pavilion", from the exhibition catalogue, "This is Tomorrow".

Fig. 48, A. and P. Smithson "The House of the Future", the living room, "Daily Mail Ideal Home Exhibition", Kensington Olympia Hall, London, 1956 (D. Van den Heuvel and M. Risselada (eds), *Alison and Peter Smithson – from the House of the Future to a house of today*, 010 Publishers, Rotterdam 2004, p. 87).

Fig. 49, "The House of the Future", inhabitants in the bedroom, clothes by Teddy Tinling, 1956 (D. Van den Heuvel and M. Risselada (eds), *Alison and Peter Smithson – from the House of the Future to a house of today*, op. cit., p. 95).

Fig. 50, "The House of the Future", inhabitants in the dressing room, clothes by Teddy Tinling, 1956 (D. Van den Heuvel and M. Risselada (eds), *Alison and Peter Smithson – from the House of the Future to a house of today*, op. cit., p. 38).

Fig. 51, Buckminster Fuller and The Dymaxion House, 1932 (D. Van den Heuvel and M. Risselada (eds), *Alison and Peter Smithson – from the House of the Future to a house of today*, op. cit., p. 46).

Fig. 52, The Monsanto House of the Future, 1956 (D. Van den Heuvel and M. Risselada (eds), *Alison and Peter Smithson – from the House of the Future to a house of today*, op. cit., p. 33).

Fig. 53, Hammer Prints Ltd, "Cowcumber", wallpaper, 1954 (M. Cotton, *Nigel Henderson & Eduardo Paolozzi: Hammer Prints Ltd 1954–75*, exh. cat, Firstsite Gallery, Colchester, 8 December 2012–3 March 2013, p. 89).

Fig. 54, Hammer Prints Ltd, "Hessian", wallpaper, c. 1955-68 (M. Cotton, *Nigel Henderson & Eduardo Paolozzi: Hammer Prints Ltd 1954–75*, op. cit., p. 103).

Fig. 55, Hammer Prints Ltd, "Barkcloth", printed and dyed cotton, c. 1957-72 (M. Cotton, *Nigel Henderson & Eduardo Paolozzi: Hammer Prints Ltd 1954–75*, op. cit., p. 49).

Fig. 56, Hammer Prints Ltd, "Sea Beasts", ceramic tiles, c. 1956-60, 15.5 x 15.5 cm each (M. Cotton, *Nigel Henderson & Eduardo Paolozzi: Hammer Prints Ltd 1954–75*, op. cit., p. 83).

Fig. 57, Hammer Prints Ltd, "Toys", ceramic tile, c. 1956-58, 15.5 x 15.5 cm (M. Cotton, *Nigel Henderson & Eduardo Paolozzi:*

Hammer Prints Ltd 1954–75, op. cit., p. 45).

Fig. 58, Hammer Prints Ltd, "Toys", ceramic dinner plates, c. 1958-62, 26 cm diameter (M. Cotton, *Nigel Henderson & Eduardo Paolozzi: Hammer Prints Ltd 1954–75*, op. cit., p. 69).

Fig. 59, Piero Fornasetti, "Orchestra", plate, 1950s, 26 cm diameter (P. Mauriès, *Fornasetti Designer of Dreams*, Thames and Hudson, London 1991, p. 166).

Fig. 60, Piero Fornasetti, "Theme and Variations", plate, 1950s, 26 cm diameter (Fornasetti B. (ed.) *Fornasetti. The Complete Universe*, Rizzoli, New York 2010).

Fig. 61, Piero Fornasetti, "Sea-shells", trays, c. 1954, 58 x 25 cm (Fornasetti B. (ed.) *Fornasetti. The Complete Universe*, op. cit.).

Fig. 62, Sonia Delaunay, six clothing design, c. 1924 (*Sonia Delaunay*, exh. cat., Tate Modern, London, 15 April – 9 August 2015, p. 140).

Fig. 63, From the left: Farfa, Tullio d'Albisola and Filippo Tommaso Marinetti, 1930, Galleria Pesaro, Milan, ceramics by Farfa
(http://www.tulliodalbisola.it/biografia/Tul_Far_Mar.html)

Fig. 64, Gary Cooper, Pablo Picasso, and Maria Janis Cooper, Madoura ceramics workshop, Vallauris, 1956, ©Lee Miller Archive
(https://www.pinterest.com/pin/576108977307136363/).

Fig. 65, Giuseppe Pinot Gallizio, "Roll of industrial painting", mix media, 1958, 64.5 x 7.400 cm (Foster, H., Krauss, R., Bois, Y.A., Buchloh B.H.D. and Joselit, D. *Art Since 1900. Modernism, Antimodernism, Postmodernism*, Thames & Hudson, New York 2007, p. 429).

Fig. 66, Giuseppe Pinot Gallizio with roll of industrial painting, Alba, 1956
(https://www.pinterest.com/steadymaupin/situationsts/).

Fig. 67, Asger Jorn, "Paris by Night", oil on reused canvas, 1959, 53 x 37 cm (Foster, H., Krauss, R., Bois, Y.A., Buchloh B.H.D. and Joselit, D. *Art Since 1900. Modernism, Antimodernism, Postmodernism*, Thames & Hudson, New York 2007, p. 431).

Fig. 68, Jay Joblin, "The 100 'Best Design' Products", in "The Fortune", April 1959, pp. 135-141.

Fig. 69, Max Bill at "Die gute Form", Basel Mustermesse, Basel 1949
(http://www.ernst-scheidegger-archiv.org/en/photos-of-artists/max-bill/).

Fig. 70, Institute of Design, Chicago 1938, photo by Lazlo Moholy-Nagy
(http://www.bauhausmuseum.com/history/chicago.php).

Fig. 71, The HfG Ulm, Ulm 1956, photo Wolfgang Slol, © HfG-Archiv Ulm
(http://www.hfg-archiv.ulm.de/english/the_hfg_ulm/).

Fig. 72, "Good Design", installation view, The Museum of Modern Art, New York 1952, photo by Soichi Sunami, © The Museum of Modern Art Archive
(http://artdaily.com/news/30533/MoMA-Revisits-What--Good-Design--was-Over-50-Years-Later#.Vh1cuRyoG3c)

Fig. 73, Allan Ballantyne, "Italian scrapbook," in Architectural Review, February 1952, vol. 111, n. 662, pp. 82-91.

Fig. 74, Tomás Maldonado at the exhibition "This is Tomorrow", London 1956
(http://www.designboom.com/design/tomas-maldonado/).

Fig. 75, "Rassegna Internazionale dell'Industrial Design", installation view, X Triennale, Milan 1954, © Archivio Storico La Triennale di Milano (M. Vitta, *Il progetto della bellezza. In design tra arte e tecnica, 1851-2001*, Einaudi, Torino 2001, Fig. 25).

Fig. 76, Pages from "Italian Industrial Design", exhibition catalogue, The Italian Institute, London 1955.

Fig. 77, Lucio Fontana, neon structure, IX Triennale, Milan 1951, © Archivio Storico La Triennale di Milano
(http://www.triennale.org/it/archivio-fotografico/esposizione/22138-09trn?cat=22148).

Fig. 78, Page from *This is Tomorrow*, exh. cat., Whitechapel Gallery, London, 9 August-9 September 1956.

Fig. 79, Ettore Bugatti's personal car, Type 41 Royale Coupe Napoleon with family chauffeur, 1927
(http://www.carstyling.ru/en/car/1927_bugatti_type_41_royale/images/31097/).

Fig. 80, Buick Century de Luxe Riviera Sedan, 1956 (R. Banham, *Design by Choice,* ed. by P. Sparke, Academy Editions, London 1981, p. 92).

Fig. 81, Reyner Banham and Tomás Maldonado, Ulm 1959, photo Wolfgang Slol, © HfG-Archiv Ulm (R. Spitz, *HfG Ulm. Concise History of the Ulm School of Design*, Jens Müller, Zurich 2014, p. 61).

Fig. 82, Gillo Dorfles, Lajatico (Pisa), 2006 (Ossanna Cavadini, N. and Sansone L. (eds), *Gillo Dorfles. Movimento Arte Concreta (1948–1958)*, exh. cat., M.A.X. Museo, Chiasso 16 September – 21 November 2010, p. 8)

Fig. 83, Gillo Dorfles, "Introduzione al disegno Industriale", Einaudi, Turin 1972, cover.

Fig. 84, Gillo Dorfles, "Kitsch. The World of Bad Taste", Bell Publishing, New York 1969, cover.

Fig. 85, posters for "Black Eyes and Lemonade", Whitechapel Gallery, London 1951 (Costin, S., Moriarty, C. and Yiakoumaki, N, *Drawing, writing and curating: Barbara Jones and the art of arrangement*, ex. brochure, Whitechapel Gallery, London 9 March – 13 September 2013, Fig. 12 and 7).

Fig. 86, Collection of objects by the Memphis Group, 1980s (https://it.wikipedia.org/wiki/Memphis_(design)#/media/File:Memphis-Milano_Movement.jpg).

Introduction

The present study was inspired by the observation of some unusual artistic and cultural phenomena identified during the 1950s in Italy and Great Britain. Different responses to the approach of modernity's second phase are evident in art and design practices in these contexts, for example: the content and design of exhibitions at the Institute of Contemporary Arts in London organized by the Independent Group; the small appliances included in the paintings of Richard Hamilton (1922–2011); the "Useless Machines" made by Bruno Munari (1907–1998, Fig. 36, 37, 38); Hammer Prints established by Eduardo Paolozzi (1928–1993) and Nigel Henderson (1917–1984); the "International Movement for an Imaginist Bauhaus" founded by Asger Jorn (1914–1973), Giuseppe Pinot-Gallizio (1902–1964) and Piero Simondo (b. 1928); and the industrial design practices of Ettore Sottsass (1917–2007). Closer observation of these phenomena revealed not only a shared desire to achieve modernity, but an emphasis on doing so in a cross-disciplinary way, amongst networks of artists and designers in and between Milan and London.

During the research done for the thesis, the recurrence of topics such as the machine, science (fact and fiction), a vision of the future, the relationship between arts and awareness of industrial design as a new discipline, in discussions, exhibitions and works raised several questions. What did art and science have in common? Why was the concept of industrial design so important for the generation of the 1950s? Why were mass-produced objects included, used or produced by visual artists? Why was the Bauhaus still so popular in the 1950s? And, why was Le Corbusier so involved in debates and discussions? These are just a few examples of the kind of issues which have arisen, and, as will become apparent, the answers reveal

interconnections amongst these questions. Therefore, the aim of the thesis is to identify and explain the reasons behind the fascination with industrial design, science and popular culture manifested in art, design and theory in Italy and Great Britain between 1948 and 1963, the moment and locations in which these interests were most concentrated.[1] This thesis's chapters will identify the networks of people and institutions driving and connecting these concerns, in the context of the historical, social and political situation in Europe after the Second World War.

On a superficial level, this complex post-war situation, particularly issues of nationalism, tradition and relationships with America, could be considered the primary cause of the 1950s' artistic and cultural phenomena. In many countries there was an urgent need for reconstruction; the European economy had collapsed, the industrial infrastructure had been destroyed and millions of people lost their houses. The United Kingdom came out of the war with a huge debt and needed the American Lend-Lease to help restore its economy. In Italy, the aftermath of war emphasised societal divisions and underlined the disparities between the northern and the southern parts of the country. The rest of Europe was also in a terrible condition. France was heavy bombarded during the liberation, its infrastructures were destroyed and its economy weakened. Germany was suddenly divided into two parts, a decision that was a clear manifestation of tension and opposition between the two political blocks. The polarity between the United States and the Soviet Union was part of wider challenges meeting nations with new boundaries and new powers.

[1] International networks necessitate some attention also being paid to other European countries, like France, Germany, the Netherlands and Switzerland. Connections to the United States – seen from Europe with a mix of contradictory feelings – admiration, emulation, suspicious and rejection for political, social and historical reasons that will be explained – will also be addressed.

The United States was seen by several European countries as a source of possible economic help. Huge amounts of assistance to the European reconstruction were provided by the plan promoted by the Secretary of State George Marshall,[2] but the United States' role in post-war Europe was not solely economic. The cultural impact of the United States on Europe was felt strongly by the Independent Group; as Magda Cordell McHale, member of the Independent Group, recalled about that time: "it was the United States that intrigued us – the America we knew from magazines, books, and occasional movies".[3] The United States also promoted a dialogue with Europe more actively through the endorsement of visual arts and the creation of conditions for a mutual exchange of crafts and goods. For example, the House of Italian Handicrafts promoted Italian visual artists and the Italian products in New York. A key role in that project was played by the refugee Max Ascoli (1898-1978),[4] who was also involved in the organization of the travelling exhibition "Italy at work", which took place in various venues across the States between 1951 and 1953.[5] In Britain on the other hand, 1951 saw the launch of an

[2] E. Hobsbawm, *The Age of Extremes: The Short Twentieth Century, 1914-1991*, Vintage, New York 1994; M. Mazower, *Dark Continent: Europe's Twentieth Century*, Vintage, New York 2000; P. Viola, *Storia moderna e contemporanea. Il Novecento*, vol. 4, Einaudi, Torino 2000; T. Judt, *Postwar: A History of Europe Since 1945*, Pimlico, London 2007; K. Lowe, *Savage Continent: Europe in the Aftermath of World War II*, Penguin, London 2012.

[3] M. Cordell McHale, "Retrospective statements", in D. Robbins (ed.) *The Independent Group: Post-War Britain and the Aesthetics of Plenty*, exh. cat., Institute of Contemporary Arts, London 1990, p. 190.

[4] A. Taiuti, *Un antifascista dimenticato. Max Ascoli fra socialismo e liberismo*, Polistampa, Firenze 2007; R. Camurri (ed.), *Max Ascoli. Antifascista, intellettuale, giornalista*, Franco Angeli, Milano 2012.

[5] M.R. Rogers, *Italy at work. Her Renaissance in Design Today*, exh. cat., Brooklyn Museum, 30 November - 31 January 1951; P. Sparke, "The Straw Donkey: Tourist Kitsch or Proto-Design? Craft and Design in Italy, 1945-1960", in *Journal of Design History*, 1998, pp. 59-69; M. Casciato, "Between Craftsmanship and Design: Italy at Work", in *La arquitectura norteamericana, motor y espejo de la arquitectura española en el arranque de la modernidad (1940-1965)*, conference papers collection, Escuela Técnica Superior de Arquitectura, Universidad de Navarra, Pamplona, 16-17 March 2006, pp. 9-18; C. Marfella, "Tra arte e arte applicata. Gli artisti alla mostra 'Italy at work', New York 1950", in *Studi e ricerche per l'arte contemporanea. Giornata in Onore di Pia Vivarelli*, conference papers collection, De Luca, Rome 2015, pp. 41-48.

international competition for a memorial sculpture dedicated to "The Unknown Political Prisoner", financed by the United States. According to the organizers, it aimed "to pay tribute to those individuals who, in many countries and in diverse political situations, had dared to offer their liberty and their lives for the cause of human freedom".[6] The initiative was open to artists of every nationality and, apparently, did not have any political allegiance. East Germany, the Soviet Union and its Eastern European satellite countries, viewed the competition with suspicion and declined to participate. Their decision added a political meaning to the event. Two years later, in 1953, the Institute of Contemporary Arts hosted the exhibition of the works presented for the competition, organized by Antony Kloman (1904–1994)[7] and financed anonymously by John Hay Whitney (1904–1982), US Ambassador to the United Kingdom, who played a major role in improving Anglo-American relationships.[8] The jury included Alfred Barr (1902–1981), director of the Museum of Modern Art in New York, and Sir Herbert Read (1893–1968), director and one of the founders of the Institute of Contemporary Arts. The

[6] The artists presented at the exhibition were Reg Butler (1913–1981), who won the competition first prize, Robert Adams (1917–1984), Mirko Basaldella (1910–1969), Max Bill (1908–1994), Alexander Calder (1898–1976), Lynn Chadwick (1914–2003), Pietro Consagra (1920–2005), Elisabeth Frink (1930–1993), Naum Gabo (1890–1977), Émile Gilioli (1911–1977), Barbara Hepworth (1903–1975), Margel Hinder (1906–1995), Richard Lippold (1915–2002), Frederick Edward McWilliam (1909–1992), Luciano Minguzzi (1911–2004), Eduardo Paolozzi, Nikolaus Pevsner (1902–1983) and Theodore Roszak (1907–1981).

[7] Kloman was the first program director at the Institute of Contemporary Arts, from 1951 to 1953. He was the brother-in-law of the American architect Philip Johnson (1906–2005), founder of the Department of Architecture and Design at the Museum of Modern Art, in New York. See: A. Massey, "Cold War culture", in *The Independent Group. Modernism and mass culture in Britain, 1945–1959*, Manchester University Press, Manchester 1995, pp. 62–71.

[8] A. Massey, "Cold War Culture and the ICA", in *Art and Artists*, June 1984, pp. 15–17; R. Burstow, "Butler's Competition Project for a Monument to 'The Unknown Political Prisoner'; Abstraction and Cold War Politics", in *Art History*, vol. 12, No. 4, December 1989, pp. 472–496; N. Aldred, "Art in Post-War Britain: a short history of the ICA", in A. Davies and A. Sinfield (eds), *British Culture of Post-War: An Introduction to Literature and Society 1945–1999*, Routledge, London and New York 2001, pp. 146–168.

relationship between Barr and the founders of the Institute of Contemporary Arts was good at the time. Roland Penrose was the first, and most likely the last, person able to secure the loan from MoMA of "Les Demoiselles d'Avignon" by Pablo Picasso (1881-1973) to Europe for the exhibition "40,000 Years of Modern Art", organized at the ICA in 1948.[9] Then, during the 1950s, it was Read who regularly went to the States, to deliver lectures and conferences in various institutions across the country, and holding the position of Norton Professor at Harvard University from 1953 to 1954. For the period of his trips, he was in constant contact with Barr.[10]

Ascoli and Read are just two of the many diverse figures involved in artistic issues in Italy and Great Britain in the 1950s. It is not possible to unify under a distinctive label all the personalities involved; everyone was autonomous, with varied motivations and backgrounds. The interest in machines, science (fact and fiction), a vision of the future, relationship between arts and awareness of industrial design as a new discipline was not homogeneous. This thesis considers affinities and dissimilarities between artists and groups, and underlines their attitude in connection with certain artistic and cultural issues and phenomena. Relationships with the themes addressed in this thesis are diverse. For example, after the darkness of the war, the unbalanced social, political and economical background, generated different attitudes and contradictory feelings about the future. To the collective imagination, tomorrow could have several landscapes and was seen alternatively as a source of hope or with apprehension. Considering differences as well as similarities has been

[9] *40,000 Years of Modern Art: a Comparison of Primitive and Modern*, exh. cat., Institute of Contemporary Arts, London 20 December 1948-29 January 1949.

[10] Read also held this post from 1964 to 1965. See: J. King, *The Last Modern: A Life of Herbert Read*, Weidenfeld and Nicolson, London 1990.

essential for this research, as has changing viewpoints on the basis of specific contexts. Italy has been addressed in terms of its varying reactions to industrial design and its theoretical debate whereas Britain has been mainly considered in the light of an expanding popular culture, as expressed by the Independent Group. Nevertheless, all the people evaluated, with their cross-disciplinary interest, were driven by their desire to express modernity and hope of a better technological future, that in their view was affecting art and design.

The British artists, designers and critics included in this thesis were members of the heterogeneous Independent Group, gathered around the Institute of Contemporary Arts in London: Lawrence Alloway (1926–1990), Reyner Banham (1922–1988), Toni del Renzio (1915–2007), Richard Hamilton, Nigel Henderson, John McHale (1922–1978), Eduardo Paolozzi, Alison and Peter Smithson (1923–2003) and William Turnbull (1922–2012). The presence of architects, visual artists, photographers, critics and, in a broader sense, designers, in the Independent Group, allowed it to encompass a variety of popular interests, which included also industrial design and an overall ambition towards expressing modernity. Works, exhibitions and writings, made, organized and written by some of these various personalities, have been referenced in the thesis in connection with Italy and other European countries.

The Italians involved in the establishment of industrial design were Gillo Dorfles (b. 1910), Lucio Fontana (1899–1968), Piero Fornasetti (1913–1988), Bruno Munari, Marcello Nizzoli (1922–2012), Gio Ponti (1891–1979), Ernesto Nathan Rogers (1909–1969), Ettore Sottsass and Marco Zanuso (1916–2001). In different ways, all of them had an original approach to architecture, design, visual arts and crafts. Some of them guided the country into the economic boom of the 1960s, while

some of the others were more conservative and had more difficulty embracing a radical path. In any case, they were all engaged in several platforms of discussions, through magazines, events, exhibitions and conferences.[11] Among them, the theory and practice of Dorfles, Fornasetti, Munari and Sottsass, will have a key part in the arguments presented in the thesis.

On the basis of these protagonists' experiences and interests, the thesis has been conceived inside a chronological frame, which starts in 1948, the year of the founding of the Institute of Contemporary Arts in London, and ends in 1963, when, after more than a decade of discussions, Dorfles wrote his landmark essay on industrial design.[12] These two events mark the dawn and dusk of the complex phenomenon that the thesis aims to discuss. The founding of the Institute of Contemporary Arts made available an ideal venue to plan and discuss the initiatives and the exhibitions presented within the thesis; the publication of "Introduzione al disegno industriale", indicates the ending of an animated debate around the new field. Occasionally, some previous or subsequent events have been included to support or explain the main points presented, quite often connected with a desire for a better future or with an on-going hope for science and technology.

Soon after its founding, the Institute of Contemporary Arts became an open place for meetings and discussions, matching the needs of a new generation of visual artists, critics, photographers, architects, musicians and amateurs, willing to express themselves and share interests. The genesis of the ICA

[11] Others relevant personalities, mainly connected with the Italians were Max Bill, Asger Jorn and Tomás Maldonado (b. 1922).
[12] G. Dorfles, *Introduzione al disegno industriale*, Cappelli, Bologna 1963; reprinted as *Introduzione al disegno industriale: linguaggio e storia della produzione di serie*, Einaudi, Torino 1972.

is well known[13] but some decisive factors should be underlined. In the late 1930s Herbert Read discussed with Peggy Guggenheim (1898–1979) the opportunity of having a contemporary art space in London, under the model of the Museum of Modern Art in New York. Peggy Guggenheim went to Paris, but World War II arrived and she left Europe for New York, where she opened "The Art of this Century Gallery" and became a patron of a new generation of artists. In London, Read did not abandon his project and, soon after the ending of the conflict, he was able to establish a new institution on Oxford Street, in the basement of the Academy Cinema, along with Roland Penrose (1900–1984), Peter Watson (1908–1956), Eric Craven Gregory (1888–1959), Geoffrey Grigson (1905–1985) and E.L.T. Mesens (1903–1971). After two years, in 1950 the ICA found its regular premises on Dover Street, the interior space was designed by Jane Drew (1911–1996) and Maxwell Fry (1899–1987), with the collaboration of Eduardo Paolozzi, Nigel Henderson, Neil Morris and a young Terence Conran (b. 1931). The involvement of these personalities demonstrates the Institute's tendency to draw on its artistic community for all activities, from its interior decoration to the installation of exhibitions which will be analysed in the first part of the thesis. Less formal than London established museums, the ICA was able to host, during the 1950s, the radical projects promoted by the members of the breakaway Independent Group. Thanks to its management's flexibility, the Institute drew together personalities with various interests, supported many initiatives and explored new fields. Jazz, for instance, was a recurring music genre at the ICA, promoted by the British composer Elisabeth Lutyens (1906–1983), along with Eduardo Paolozzi,

[13] A. Massey and G. Muir, *Institute of Contemporary Arts: 1946–1968*, Institute of Contemporary Arts, London 2014.

who was once again involved in something not strictly connected with his activity as visual artist.[14]

If Paolozzi was intrigued by jazz, Lawrence Alloway was fascinated by Hollywood movies and was one of the organizers of the lectures on films themes, planned at the ICA in 1955.[15] Reyner Banham was attracted by new technologies and, in a broader sense, by consumer goods. During his tenure in the committee at the Institute, he not only delivered lectures on the theme - such as "The Impact of Technology" in 1953 and "Borax, or The Thousand Horse-Power Mink" in 1955[16] - but also invited as guests speakers Dorfles[17] and the Argentinian scholar Tomás Maldonado.[18] Dorfles was at the time one of the established contributors of *Domus* and was the curator of the first foreign exhibition devoted only to industrial design, which took place at the Institute of Italian Culture in London, in July 1955.[19] Maldonado, on the other hand, was from 1954 the director of the Hochschule für Gestaltung in Ulm,[20] the school founded in the German town (Fig. 71), in the legacy of the Bauhaus. He was also in London at the opening of "This is Tomorrow" in 1956 (Fig. 74), an exhibition that included several projects by former members of the Independent Group.[21]

[14] In 1966 Paolozzi wrote the lyrics for "Akapotik rose", a score composed by Lutyens for soprano and chamber ensemble.
[15] A. Massey and G. Muir, op. cit., pp. 176-180.
[16] See: Ibid., p. 173; A. Massey, "Appendix 2", in *The Independent Group. Modernism and mass culture in Britain, 1945-1959*, op. cit., pp. 142-143.
[17] A. Massey, "Appendix 2", op. cit., p. 144.
[18] Maldonado's lecture was "The Pedagogical Impact of Automation", 12 April 1957, *ICA Bulletin*, n. 75, April 1957, Tate Archive, 955/14/8.
[19] G. Dorfles and M. Zanuso, *Selected Examples of Italian Industrial Design*, exh. cat., Italian Institute, London 30 June-30 July 1955.
[20] R. Spitz, *The Ulm School of Design: A View Behind the Foreground*, Axel Menges, Stuttgard 2002; R. Spitz, *HfG Ulm. Concise History of the Ulm School of Design*, Jens Müller, Zurich 2014.
[21] *This is Tomorrow*, exh. cat., Whitechapel Gallery, London 9 August-9 September 1956.

In the Independent Group's works and activities, interiors and industrial design objects were quite often included in the background of their works. Hamilton, for instance, added various consumer goods (vacuum cleaners, radios, TV sets, cars, etc.) in his collages, prints and paintings (Fig. 33, 34, 35). These objects were usually located in interior spaces. Alison and Peter Smithson, designed the "House of the Future" for the "Ideal Home Exhibition" in 1956 complete with sophisticated machines (Fig. 48, 49, 50). The Smithsons were also fascinated by one of the iconic cars of the 1950s, the Citroen DS19 (Fig. 29), which they owned and included in many pictures showing the exterior view of their weekend house in Wiltshire (Fig. 31). Paolozzi and Henderson, on the other hand, demonstrated greater proximity to industrial productions through Hammer Prints Ltd (see from Fig. 53 to Fig. 58). The company, which they set up in 1955, produced art and craft objects, such as ceramics, tiles, wallpapers and printed fabrics but, despite its success, never achieved mass distribution. It was an experimental and small-scale project whose products were manufactured by other companies. Among the Independent Group, Banham and McHale were the only ones who looked at design from a theoretical point of view but, of the two, it was Banham who took part in an international platform of discussions, chiefly organized by Italian magazines, with the involvement of Dorfles, Maldonado, Rogers and many others.[22]

It was in Italy, and for the most part Milan, that critics, historians, architects, artists and designers, started a theoretical debate amongst a group of well-educated people, gathered around magazines like *Domus*, *Casabella*, *Stile Industria* and *Civiltà delle macchine*. Outside bigger cities more traditional agricultural communities persisted, with a high rate

[22] See the chapter "Reyner Banham - Aesthetics and Popular Art", of the present study.

of illiteracy, for the most part concentrated in the South.[23] Due to the destruction of major Italian towns by bombing, between 1945 and 1958 there were intense reconstruction plans, with debates and symposia, chiefly organized in Rome and Milan.[24] The discussion was initiated by the intellectual elite, who used a philosophical framework in order to define and locate the aesthetic of industrially made products. Most of the discussions started with the IX Triennale, organized in 1951 and its exhibition "La Forma dell'utile" and its symposium "Divina Proporzione" (Fig. 24), an international conference that implied the bond between history, architecture and visual arts.[25] Among the elite gathered around the Triennale, matters like city planning, architecture and design were the main subjects of discussions. An example of what came from an early concern about rebuilding, was the experimental QT8 (Quartiere Triennale 8), a neighbourhood designed by the architect Piero Bottoni (1903-1973) for the VIII Triennale in 1947.[26] The project provided the first Italian prefabricated structures, with heterogeneous housing units, green areas and an artificial hill, Monte Stella, made with the debris of buildings destroyed under the bombs.[27]

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[23] D. Forgacs, "Cultural Consumption, 1940s to 1990s", in D. Forgacs and R. Lumley (eds), *Italian Cultural Studies. An Introduction*, Oxford University Press, Oxford 1996, pp. 273-290.

[24] M. Tafuri, *Storia dell'architettura italiana (1944-1985)*, Einaudi, Torino 1986; L. De Rosa, *Lo sviluppo economico dell'Italia del dopoguerra a oggi*, Laterza, Bari 1997; F. Brunetti, *L'architettura in Italia negli anni della ricostruzione. Le vicende e le immagini*", Alinea, Firenze 1998; P. Di Biagi, *La grande ricostruzione. Il piano Ina-Casa e l'Italia degli anni '50*, Donzelli Editore, Roma 2001.

[25] *IX Triennale*, exh. cat., Palazzo dell'Arte, Milano, May-November 1951. "Lo studio delle proporzioni", in *Domus*, No. 261, September 1951, pp. 14-16; A.C. Cimoli and F. Irace, "La Divina Proporzione. Triennale 1951", Electa, Milano 2007; A.C. Cimoli and F. Irace, "Triennale 1951: Post-War Reconstruction and 'Divine Proportion'", in *Nexus Network Journal*, 15, Spring 2013, pp. 3-14.

[26] *VIII Triennale*, exh. cat., Palazzo dell'Arte, Milano, Spring-Summer 1947.

[27] Involved in the project there were Pietro Lingeri (1894-1968), Ernesto Nathan Rogers, Vittoriano Viganò (1919-1996) and Marzo Zanuso. See: *Catalogo Guida T8*, Centro Studi Triennale, Stamperia grafica Meregalli, Milan, 19 July 1947; P. Bottoni, "QT8: quartiere sperimentale della triennale di Milano", in *Edilizia Moderna*, No. 46, June 1951; G. Tonon, "QT8.

For the Italian side of this thesis, it was necessary to look at certain individuals and use them in order to explain attitudes to industrial products. Bruno Munari, for instance, with his "Useless machines" (Fig. 36, 37, 38), expressed an opposite tendency to the function that industrial products should have, as stressed by Max Bill.[28] Lucio Fontana, with his light installation at the Milan Triennale in 1951 (Fig. 77), gave his futuristic answer to modernity and tried to set a dialogue with space and architecture. Ettore Sottsass, also involved in several debates, shifted from his architectural practice to a professional design activity. As a culmination of this multifaceted period, dominated by various personalities, Gillo Dorfles settled the matter, writing "Introduzione al disegno industriale" (Fig. 83), the first theoretical essay on the new discipline. Although industrial design at that point had been considered a symbol of modernity, the book gave historical accounts of sources for the recent field, such as William Morris's Morris & Co., Art Nouveau and the Bauhaus. Then, it clarified what could be included into industrial design and what should be put aside. It also contained the current theories on semiotics and semantics and analysed concepts such as styling and consumption. All these aspects were presented, raised and discussed during the previous decade by Dorfles himself, Banham, Bill and Maldonado.

The thesis focuses on several cross-disciplinary experiences - seen in some cases as expressions of and in other case as reactions to - the second phase of modernity, which started with the post-war period. The discoveries in science, the presence of new machines, the attitude toward the unknown

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Urbanistica e architettura per una nuova civiltà dell'abitare", in G. L. Ciagà and G. Tonon (eds), *Le case nella Triennale. Dal parco al QT8*, Electa, Milano 2005, pp. 34-103.

[28] M. Bill, *Form, Function, Beauty = Gestalt*, Architectural Association London, London 2011.

possibility offered by the future, the emerging of industrial design as new branch, the rise of popular culture were all interconnected aspects of the 1950s, which helped to bring together individuals in art and design. A combination of these factors was, for example, the uniting force behind the Independent Group, as retrospectively recognised by Mary Banham:

> While we often strongly disagreed over details, the cement that held us was an overwhelming belief in the future and in technology as the means, along with a certainty that the past was of interest only as a tool for thinking about the brighter future. In the early 1950s the recent past and the austere present was something we did not like to dwell on. Tomorrow had to be 'new and improved'.[29]

These attitudes will be explored through both theoretical speculation and practical application. For example, in the chapter on the future, "The Future of the Future", the book written in 1969 by John McHale,[30] and "The House of the Future" (Fig. 48, 49, 50), designed by Alison and Peter Smithson with the features of an atomic shelter, will both be addressed.

In order to explain these complementary responses to modernity, the thesis has been divided into three parts, addressing key themes, then practical and theoretical definitions, and finally the approaches of two major figures in these debates. In the first part, core interests showed in the period, science and biology, technology and machines, and visions of the future, are explored through their manifestation in exhibitions organized in London during the 1950s by or with members of the Independent Group ("Growth and Form", Fig. 1; "Parallel of Art and Life", Fig. 17; "Man, Machine and Motion" Fig. 18; "This is Tomorrow", Fig. 44, 46). Under the headings of

[29] M. Banham, "Retrospective statements", in D. Robbins, op. cit., p. 188.
[30] J. McHale, *The Future of the Future*, Braziller, New York 1969.

'Science', 'Machine', and 'Future', British events, movements, personalities and situations will be connected to those in Italy, the rest of Europe and the United States in order to demonstrate affinities and differences. The second part deals with various cross-disciplinary activities, related in some way with mass production, particularly Hammer Prints Ltd and the International Movement for an Imaginist Bauhaus. This part analyses attempts to define and attitudes towards the new discipline across Europe, underlining shared tendencies as well as dissimilarities. The third section is devoted to the writings of Reyner Banham and Gillo Dorfles, as promoters of two different attitudes to industrial design. A selection of Banham's articles written during the 1950s and mainly published in British magazines will be considered, while Dorfles's critical production will be analysed in conjunction with the book "Introduzione al disegno industriale". In the years investigated within this research, Banham and Dorfles considered industrial design products as manifestations of modernity. However, they looked at them through two different theoretical views: the British critic considered industrial design as an expression of popular culture; the Italian saw in it a new branch of art produced by machine and, therefore, the art of the future.

Most of the documents used for this thesis are published texts – a key exception being the author's interview with Gillo Dorfles in 2011 – but these texts have rarely been linked before and many have not been previously translated from the original Italian or French. The fact that these texts were widely available in magazines such as *Architectural Review* and *Domus* is crucial to this thesis's argument of cross-pollination. Archival material has also been used to shed light on events and exhibitions, particularly those taken place at the Institute of Contemporary Arts. As already underlined, the study is a cross-cultural analysis, a broader picture of facts and their

intersections, mainly based on Great Britain and Italy. This contribution is intended to give a new reading of movements and tendencies, a better understanding of the 1950s, by connecting countries and fields, usually studied or considered as separate entities and explaining them in the light of a wider context.

This study brings together British and Italian methodologies as well as material. This cultural studies approach to the visual arts and design, more established in Great Britain, has only taken off in Italy in the last decade.[31] The study reflects also an analytic attitude, derived from Italian approaches to art history and the more pragmatic British approach. These approaches will both be evident in several chapters, in which topics are treated in detail, with a philological attitude that derives from the Italian studies on art history. This is combined with an attempt to see facts and people within a broader context, as in a British cultural study.

Over the last 30 years, since the pioneering work by Anne Massey,[32] research on the Independent Group and on its single personalities has increased.[33] However, most of these essays

[31] Since the study conducted by David Forgacs and Robert Lumley (See: "Introduction: Approaches to Culture in Italy", in D. Forgacs and R. Lumley (eds), *Italian Cultural Studies. An Introduction*, op. cit., pp. 1-11), interest in cultural study in Italy has grow, with two magazines devoted to the field: *Ágalma. Rivista di studi culturali e di estetica* founded and directed since 2000 by Mario Perniola (b. 1941) and *Studi culturali*, published since 2006 by Il Mulino, Bologna.

[32] A. Massey, "The Independent Group and Modernism in Britain, 1951-1956", in *Association of Art Historians Bulletin*, July 1984, pp. 23-24; A. Massey, "The Independent Group: Towards a Redefinition", in *The Burlington Magazine*, n. 129, April 1987, pp. 232-242; A. Massey and P. Sparke, "The Myth of the Independent Group", in *Block 10*, 1985, pp. 48-56.

[33] D. Robbins (ed.), *The Independent Group: Post-War Britain and the Aesthetics of Plenty*, op. cit.; D. Mellor, *The Sixties Art Scene in London*, Phaidon, London 1993; A. Massey, *The Independent Group. Modernity and mass culture in Britain, 1945-1959*, op. cit.; L. Deighton and A. Seago, *Burning the Box of Beautiful Things: The Development of a Postmodern Sensibility*, Clarendon Press, Oxford 1995; A. Massey, "Any Old Things: The Independent Group and Material Culture", Norwich School of Art and Design, publication of conference proceedings to accompany "THINGS"

and exhibitions catalogues tend to look at the single experiences, without considering a wider international scenario. Quite often, the point of view used, has been that art, architectural and design historians, without considering the opportunity of applying a cultural studies analysis. Concerning the Independent Group, an exception is the book edited in recent years by Claude Lichtenstein and Thomas Schregenberger, as well as the August 2013 issue of the *Journal of Visual Culture* with contributions by, amongst others, Ben Highmore. Regarding the post-war years in Britain, other exceptions are the essays written by Mark Crinson and Claire Zimmerman and the one by Richard Hornsey; regarding the post-war years in Britain, other exceptions are the essays written by Mark Crinson and Claire Zimmerman and the one by Richard Hornsey.[34]

The same situation has occurred in the literature on the Italian personalities included in the present study. All of them have been analysed in several art, architectural and design history books and in various exhibition catalogues, but they have never seen under a broader perspective. Banham and Dorfles, their thinking and their prolific writings, have been studied individually, but little attention has been paid to the articles and essays written in the 1950s,[35] and they have never previously been linked.

exhibition, October 2000; C. Lichtenstein and T. Schregenberger, *As Found: The Discovery of the Ordinary*, Lars Muller Publishers, Baden 2001; A. Massey, "The Independent Group: Urban Reality and the Impact of Science, the Media and American Popular Culture", in *Blast to Freeze: British Art in the Age of Extremes*, exh. cat., Kunstmuseum, Wolfsburg, 14 September 2002–19 January 2003.

[34] C. Lichtenstein and T. Schregenberger, op. cit.; B. Highmore, "Brutalist Wallpaper and the Independent Group", in *Journal of Visual Culture*, Vol. 12, No. 2, August 2013, pp. 205-221; M. Crinson and C. Zimmerman, *Neo-avant-garde and Postmodern*, Yale University Press, New Haven 2010; R. Hornsey, *The Spiv and the Architect. Unruly Life in Post-War London*, The University of Minnesota, Minneapolis, 2010.

[35] On Banham: P. Sparke, *Theory and Design in the Age of Pop*, Phd thesis, Brighton University, 1975; R. Banham, *Design by Choice*, ed. by P. Sparke, Academy Editions, London 1981; N. Whiteley, *Reyner Banham. Historian of the Immediate Future*, The MIT Press, Cambridge Mass. 2003. On Dorfles: L.

Regarding texts on Italian industrial design, the main focus in the past decades has been chiefly on practice, rather than on history. There are, of course, exceptions among scholars both in Italy,[36] for example Andrea Branzi, and internationally. Penny Sparke was one of the first to look at the field from several perspectives, providing historical references and underlining contradictions between the Italian art and craft tradition and the desire for mass production.[37] Nevertheless, in recent years in Italy, there has been a new interest in industrial design theories, with the original vision of Maurizio Vitta, concerned with historical facts, aesthetic ideas, countries and personalities.[38]

Bearing in mind what has been written until now on the Independent Group, on industrial design, on the thinking of Banham, Dorfles and on the activities of the other personalities included in the thesis, this research aims to provide a cultural analysis of the 1950s, through a cross-disciplinary approach, highlighting connections among people never previously

Tedeschi, *Gillo Dorfles: scritti di architettura, 1930-1998*, Accademia di architettura, Mendrisio 2000; F. Puppo, *Dorfles e dintorni*, Archinto, Milano 2005; A. Tolve, *Gillo Dorfles. Arte e critica nel secondo Novecento*, La città del sole, Reggio Calabria 2011.

[36] A. Branzi, *Pomeriggi alla media industria. Design e seconda modernità*, Idea Book, Milano 1988; A. Pansera, *Storia del disegno industriale italiano*, Laterza, Bari 1993; R. Bodei, *Le forme del bello*, Il Mulino, Bologna 1995; A. Branzi, *Introduzione al design italiano. Una modernità incompleta*, Baldini e Castoldi, Milano 1999; R. De Fusco, *Storia del design*, Laterza, Bari/Roma 2010.

[37] P. Sparke: *Italian Design, 1870 to the Present*, Thames and Hudson, London 1988; "The Straw Donkey: Tourist Kitsch or Proto-Design? Craft and Design in Italy, 1945-1960", op. cit.; "A modern identity for a new nation: design in Italy since 1960" in Z.G Baranski. and R.J. West (eds), *The Cambridge companion to modern Italian culture*, Cambridge University Press, Cambridge 2001, pp. 265-281; "Italy's new domestic landscape, 1945-1972", in P. Sparke, A. Massey, T. Keeble and B. Martin (eds), *Designing the modern interior: from the Victorians to today*, Bloomsbury Academic, London 2009, pp. 183-193.

[38] M. Vitta: *Il disegno delle cose. Storia degli oggetti e teoria del design*, Liguori, Napoli 1996; *Il progetto della bellezza. In design tra arte e tecnica, 1851-2001*, Einaudi, Torino 2001; *Il rifiuto degli dei. Teoria delle belle arti industriali*, Einaudi, Torino 2012.

linked. In the case of Banham, for example, prior studies have omitted his role in the definition of popular culture as an expression of contemporary society, rather then as an anticipation of American Pop Art. On the other hand, "Introduzione al disegno industriale" by Dorfles has been seen inside a wider reflection on industrial design, with the inclusion of Banham himself and of other British scholars. Visual arts, architecture, photography, industrial design, history, criticism and science are all subjects taken in consideration in this study. After a long presentation of these various interests manifested during the 1950s, the thesis focuses then on Banham and Dorfles as the expression of two respective attitudes toward modernity: identifying and popularizing contemporary icons and theorizing machine-made objects.

Some questions raised at the beginning of this project were: what kind of understanding of biology, science and technology did people have in the 1950s? What sort of scientific knowledge did the Independent Group have? One of the answers is that the perception of science was filtered through science fiction books, movies, TV programmes and educational talks. The novels written by the American writer Clifford D. Simak (1904-1988),[39] the magazine "Astounding Science Fiction",[40] movies like "This Island Earth"[41] and "Forbidden

[39] One of the first novel written by Simak was "Cosmic Engineers", serialized in 1939 for the magazine "Astounding Science Fiction" and then published by Gnome Press in 1950. Another of his popular book was "Ring Around the Sun" in which the main character steps into parallel quantum earths.
[40] The magazine is monthly and it was first published in 1930.
[41] Directed in 1955 by the American Joseph M. Newman (1909-2006), "This Island Earth" was based on the eponymous novel written by Reymond F. Jones (1915-1994) and originally published in the early American science fiction magazine "Thrilling Wonder Stories".

Planet" (Fig. 45), enthralled the former members of the Independent Group.[42] According to Toni del Renzio:

Books and magazines were passed around. The latest American slang was eagerly adopted alongside the neologisms of technology and science, with new meanings and expression wrung from their conjunction. Conspicuous in this mix were the vocabularies of information theory and cybernetics.[43]

Cybernetics offers an example of how artists adopted ideas from science and technology. William Ross Ashby (1903-1972),[44] a preeminent British psychiatrist interested in the field, delivered a lecture at the ICA in 1960 on cybernetics, eight years before the ICA staged an exhibition around this topic.[45] Ashby's books written in the 1950s, were probably known by Alloway,[46] who was interested in both cybernetics and game theory.[47] The latter became quite popular at the ICA; in 1957 professor Steven Vajda (1901-1995) gave a "Theory of Games lecture" at the Institute[48] and, around the same period,

[42] L. Alloway, "Retrospective statements", in D. Robbins (ed.) *The Independent Group: Post-War Britain and the Aesthetics of Plenty*, op. cit., p. 187.

[43] T. Del Renzio, "Retrospective statements", in D. Robbins (ed.) *The Independent Group: Post-War Britain and the Aesthetics of Plenty*, op. cit., p. 193.

[44] W. Ross Ashby: *Design for a Brain*, Chapman & Hall, London 1952; *An Introduction to Cybernetics*, Chapman & Hall, London 1956.

[45] *ICA Bulletin*, March/April 1960. Between 2nd August and 20th October 1968, the Institute of Contemporary Arts would host the exhibition "Cybernetic Serendipity: The Computer and the Arts", organized by Jasia Reichardt (b. 1933), Mark Dowson and Peter Schmidt (1931-1980). As catalogue it was published a special issue of "Studio International".

[46] E. M. Stryker, "Parallel Systems: Lawrence Alloway and Eduardo Paolozzi", conference paper presented at the symposium "Lawrence Alloway Reconsidered", Tate Britain, 30 March 2011.

[47] The study of strategic decision making, known as "Game Theory", developed in the twentieth century by the Hungarian American mathematician John von Neumann (1903-1957), along with the German economist Oskar Morgenstern (1902-1977). Their results were fully explained in the essay "Theory of Games and Economic Behavior", published by Princeton University Press in 1944.

[48] Steven Vajda, born in Budapest and educated in Wien, spent a great part of his life in Great Britain. He was professor first at the Birmingham University and than at the Sussex University. He was the author of several books on mathematic programming, game theory and statistics. See: S. Vajda, *Theory of Games and Linear Programming*, Metheun, London 1956. The lecture at the Institute of Contemporary Arts took place on 10th January 1957 (*ICA Bulletin*, n. 72, 1957).

Toni del Renzio discussed the fashion industry using game theory.[49]

Chess fascinated game theorists as much as it had artists, including Duchamp (1887-1968), Picasso and Ernst (1891-1976).[50] The chessboard itself was source of inspiration, used by Johannes Itten (1888-1967) and Paul Klee (1879-1940) at the Bauhaus with educational aims, and by other abstract painters during the first half of the century.[51] Many of them represented a chromatic variation of a chessboard; for example, Max Bill's "11 x 4:4" colour lithography series, made in 1970, which was accompanied by an explanation of the sequences. Mathematics was an on-going interest for Bill, since his years at the Bauhaus, where he had the opportunity of following lectures by the mathematician Friedrich Köhn, a member of the Einstein Institute.[52] In his paintings Bill combined principles from chemical composition, polar molecules, mathematical and geometrical structures.[53] In the "Cahier d'art", the Swiss artist reproduced the mathematical models hosted at Musée Poincaré in Paris. The sculpture "Unendliche Schleife" ("Endless Loop"), presented for the first time at the Triennale in Milan in 1936, was an applied example of these fascinations. Mathematical theories as well as algebraic and analytic geometry were sources of attractions for many artists. Again in 1936 at the Institut Poincaré, Man Ray found in a dusty chest objects made of metal, wood, plaster and wire, which represented algebraic equations. In the same year he

[49] *ICA Bulletin*, March 1957.

[50] L. Withman, *Picasso and the Chess Player: Pablo Picasso, Marcel Duchamp, and the Battle for the Soul of Modern Art*, University Press of New England, Hanover and London 2013.

[51] J. Itten, *Design and Form: The Basic Course at the Bauhaus and Later*, Thames and Hudson, London 1975 [first published in 1963, in German].

[52] A. Thomas, "Max Bill, The early years. An interview", in *Journal of Decorative Arts and Propaganda*, 1993, No. 19, p. 103.

[53] R. Fabbri, *Max Bill in Italia: lo spazio logico dell'architettura*, Bruno Mondadori, Milano 2011, pp. 16-17.

reproduced each of them in a series of paintings called "Shakespearean Equations".[54]

As in this example, the attention paid to discoveries made in scientific fields within the thesis, is born from the same spirit that animated people gathered at the ICA: curiosity and willingness to understand. This thesis argues that the Independent Group drew their scientific knowledge from popular science materials and so this thesis is based on such materials, rather than scientific expertise itself.

As will be addressed in the conclusion of this thesis, the 1960s, the future for the 1950s, saw changes in Italy and Britain that were, in part, consequences of the previous decade's discoveries in science and technology and hopes for the future. In Italy the shift from a country steeped in tradition and famed for its ceramics and handicrafts to the economic miracle,[55] with a promise of a prosperous future, as seen in the famous movie "La Dolce Vita", directed in 1960 by Federico Fellini,[56] was related to the discussions in this thesis. Likewise Britain's prominence in popular culture, particularly pop music and fashion creativity,[57] stemmed from the interest in American popular culture addressed by this research. As such this research not only emphasises the importance of the 1950s in the art and design of Italy and Great Britain, and their

[54] Each painting had the title of a Shakespeare's comedy. See: *Man Ray - Human Equations. A Journey from Mathematics to Shakespeare*, The Phillips Collection, Washington, 7 February-10 May 2015.

[55] D. Forgacs and R. Lumley, *Italian Cultural Studies*, op. cit.; R. Lumley, *Italian Cityscapes. Culture and Urban Change in Contemporary Italy*, Exeter University Press, Exeter 2004.

[56] A. Ricciardi, "The spleen of Rome: mourning modernism in Fellini's La Dolce Vita", in *Modernism/Modernity*, Vol. 7, No. 2, 2000, pp. 201-219; D.A. Mellor, *'Fragments of an Unknowable Whole': Michelangelo Antonioni's Incorporation of Contemporary Visualities in London, 1966*, in *Visual Culture in Britain*, Vol. 8, No. 2, 2007, pp. 45-61.

[57] C. Breward and G. Wood (eds), *British Design from 1948-2012: Innovation in the Modern Age*, exh. cat., Victoria and Albert Museum, London 31 March-12 August 2012.

relationship, but also has repercussions for the wider understanding of this decade's role in the story of post-war Europe.

Part I

Science, Machine and Tomorrow

During the 1950s some key exhibitions, mainly organized by members of the Independent Group at the Institute of Contemporary Arts (ICA) in London, were emblematic manifestations of the spirit of the time. "Growth and Form", "Parallel of Life and Art", "Man, Machine and Motion", all at the ICA, and "This is Tomorrow", at the Whitechapel, encompassed the fascination that the British Independent Group had for various topics and disciplines, including science and technology, along with great expectations for the forthcoming decades. In the complex context of the post-war period, the hope for a better future, eventually made possible thanks to scientific discoveries and technological advancement, was one of the driving forces behind the exhibitions organised by former members of the Independent Group.

The first chapter of this part will analyse "Growth and Form" and "Parallel of Life and Art" in connection with the general understanding of science. In the second chapter "Man, Machine and Motion" will be looked at in conjunction with the spread of new technology. Finally, in the third chapter, "This is Tomorrow" will be considered in relation to the vision of the future. These British exhibitions are seen within a wider context and examined in connection with others events organized in Great Britain, in Italy and elsewhere, as the Festival of Britain, the Triennale in Milan and the International Fair in Brussels. The aim of studying these interrelationships is to explain the reasons behind some apparently atypical fascinations, arising amongst the Independent Group and seen here, in the light of the connections provided, as emblematic of a will to understand the changing nature of modern life and as a reaction to the second phase of modernity.

Science

The first two exhibitions organized in London at the Institute of Contemporary Arts, which would surprise the public and further generations of scholars and critics for the unconventional topics and pieces presented, were "Growth and Form: the Development of Natural Shape and Structure" and "Parallel of Life and Art".

The former opened on the 3rd July 1951 in at the ICA in Dover Street, occurring in conjunction with the Festival of Britain and, as will become apparent, influenced by that Festival. Officially curated by Richard Hamilton, the exhibition was originated from an idea by Nigel Henderson and Eduardo Paolozzi, and it is well-known that the inspiration for the exhibition came from the book "On Growth and Form", published in 1917 by the pioneering mathematical biologist D'Arcy Wentworth Thompson (1860–1948). The essay was quite revolutionary at the time because it stressed evolution as the fundamental determinant of form and structure.

The topics presented were divided into "Astronomical Form", "Atomic Particle Traces", "Crystal Structure", "Crystal Growth", "Insects", "Marine Larvae", "Mathematical Form", "Molluscs", "Plant Forms" and "Vertebrates". Biological forms, chemical structures, features of mathematical formulas and the early stage of various life forms were presented as pictures, specimens or models. Two films showed, respectively, the growth of a crystal and the early development of a sea urchin, both projected onto the floor. Nigel Henderson, who had drawn Hamilton's attention to Thompson's book, was included in the exhibition with two photographic images: a radish leaf and a photogram of a spider. As appear in Fig. 1, the exhibition was a

direct quoting of the illustrations contained in Thompson's book, presented both models and pictures of a Nassellarian skeleton (Callimitra agnesae Hkl) and a Prismatium tripodium; models of a Lithocubus geometricus Hkl and Spicules of Granfia; and a picture of a shell of Nautilus pompilius. Thompson's study of a falling drop became a splash when using electronic flash equipment.[58] As effectively described by Victoria Walsh in the catalogue of the recent Richard Hamilton retrospective at Tate Modern, in 2014, the space of the ICA was divided into three parts, which formed a "single mixed-media installation".[59] While Hamilton was responsible for the overall setting of the exhibition, the accuracy of the material presented and the descriptions in the catalogue were probably guaranteed by the committee, which included several people from scientific backgrounds. In addition to Herbert Read and Roland Penrose as organisers, the others included on the board were Marcus Brumwell (1901-1983), Director of the Design Research Unit and editor of another successful book of the time, "This Changing World"; the designer Ronald Avery and the well-known scientist Jacob Bronowski (1908–1974), both members of the Festival of Britain Executive Committee; the anarchist and physician Alex Comfort (1920–2000); the co-founder of the ICA, publisher and philanthropist Eric Craven Gregory (1888-1959); the scientist, historian and sinologist Joseph Needham (1900–1995); the first director of the ICA in Dover Street, Ewan Philips (1914-1994); the biologist and geneticist Conrad Hal Waddington (1905–1975); and the industrial engineer and amateur physician Lancelot Law Whyte (1896–1972).

[58] D. A. W. Thompson, *On Growth and Form*, Cambridge University Press, Cambridge 1962: falling drops, Fig. 12–14; Spicules of Granfia, Fig. 48; Nassellarian skeleton Fig. 62; Lithocubus geometricus, Fig. 64; Prismatium tripodium, Fig. 65; shell of Nautilus pompilius, Fig. 70.

[59] V. Walsh, "Seahorses, Grids and Calypso," in M. Godfrey, P. Schimmel, and V. Todolí (eds) *Richard Hamilton*, exh. cat., Tate Modern, London, 13 February - 26 May 2014, pp. 62–68.

The images of atomic particles and crystal structures presented at "Growth and Form" became available for the first time thanks to updated microscopes and more accurate cameras. In 1951, when the exhibition at the ICA was organized, the physicist Erwin Wilhelm Müller (1911-1977)[60] invented the first microscope that made it possible to see atoms. His discovery gave a visualisation of an immensely tiny structure and provided fascinating new sources of images for generations of visual artists, photographers, architects and designers.[61] Again in 1951, David Bohm proposed his interpretation of quantum mechanics that would allow scientists to work on particles acceleration and to study the movement of atoms at high energies.[62] Hamilton, himself, in 1950, a year before the exhibition at the ICA, took advantage of these new sources and focused his attention on biological structures, with the series of prints dedicated to anemones and other microscopic forms of life, collected under the title "Microcosmos (Plant Cycle)" (Fig. 4 and 5). One of them was used as illustration for the cover of the exhibition catalogue (Fig. 2) and a similar attention to these structures was presented by William Turnbull in the poster designed for the exhibition (Fig. 3). The interest that Hamilton, Henderson and Paolozzi had in Thompson was probably nourished by the general enthusiasm for science and for new discoveries that characterised the era after the war. At the time, every invention

[60] Müller was a German physicist who did the first experimental observation of atoms. He invented different types of microscopes to investigate molecular structures and analyse atom structure.

[61] The importance of the microscope for visual artists was underlined by the book: W. Watson Baker, "World beneath the microscope", written in 1935, as reported by M. Dorrian, "Adventure on the Vertical", in *Cabinet*, No. 44, Winter 2011/2012.

[62] The American physicist David Bohm (1917-1992) worked on quantum physics and relativity theory. His book "Quantum Theory" published in 1951 (Prentice Hall, New York) was well received by several scientists, including Albert Einstein. During the McCarthy era, due to suspicions that he was a Communist, Bohm left the United States and moved to London where he acquired British citizenship.

was seen as a new step forward in human progress and as a possible source of inspiration.

The fact that visual artists, architects, photographers and critics could be nourished by scientists' discoveries explains the variety of people included on the board of "Growth and Form". Furthermore, the exhibition at the ICA should also be looked at in the wider context of the Festival of Britain as it links with the Festival's "Exhibition of Science", held at the Science Museum in 1951 and designed by the architect Brian Peake.[63] Like "Growth and Form", the event at the Science Museum was mainly based on biological and chemical structures and was divided into three parts. The first displayed the "Physical and Chemical Nature of Matter", with the presentation of over 90 kinds of atoms. The second part was called "The Structure of Living Things" and dealt with plants and animals. The third was "Stop Press" and presented some of the latest topics analysed in recent scientific research. The pictures exhibited included models of living cells, a periodic table of elements, a hexagonal grid of carbon atoms and other structures. As appeared in Fig. 6, for the occasion the museum's façade was covered by a sequence of hexagonal shapes referred to as the benzene molecule feature. In the interior the motifs of textiles, wallpapers and tapestries were based on crystal formations and other biological structures (Fig. 8). The walls of the museum's cinema, for instance, had wallpapers inspired by images of myoglobin upholstery, designed by Charles Garnier (b. 1925) for ICI Leathercloth, and with insulin chains design for wallpaper by Robert Servant and produced by John Line and Sons. Even in South Bank a decorative screen designed by Edward Mills was inspired by chemical structure (Fig. 7).

[63] M. Banham and B. Hiller (eds), "A Tonic to the Nation: The Festival of Britain, 1951", Thames and Hudson, London 1976, pp. 144-147.

The X-ray photographs of crystal and mineral structures were extensively used at the Festival of Britain owing to the studies done by Dr Helen Megaw (1907-2002), an Irish pioneer in X-ray crystallography, who made measurements of the cell dimensions of ice and established the perovskite crystal structure.[64] Megaw was probably one of the first scientists to recognize the appeal of chemical structures to contemporary designers. She had, in 1946, written to Brumwell to suggest he direct the attention of wallpaper and fabric designers to X-ray crystallography.[65]

At the time of the Festival of Britain the use of images of chemical and biological organisms as patterns for different materials and objects was probably at its peak. In the section called "Festival Pattern Group", twenty-eight leading manufacturers[66] presented glass, ceramics, metalwork, plastics, textiles and wallpapers decorated with motifs taken from diagrams of atomic structures. Notable among the objects presented were sample booklets of tie fabrics designed by George Reynolds for Vanners and Fennell, specialists in tie and cravat patterns, which were based on Megaw's discoveries, and the high-pressure decorative plastic laminate with Max Perutz's Haemoglobin 8.26 structure, designed by Martyn Rowlands (1923-2004) for Warerite.[67] During this wave of enthusiasm for scientific patterns, in 1951 at the International

[64] H. Megaw, "The Investigation of Crystal Structure", in *Architectural Review*, Vol. 109, No. 652, April 1951, pp. 236-239.
[65] Letter to Brumwell, 20/2/1946, (AAD 1977/3/12) reported in L. Jackson, "From Atoms to Patterns: The Story of the Festival Pattern Group", in *From Atoms to Patterns. Crystal Structure Designs from the 1951 Festival of Britain*, exh. cat., Wellcome Collection, London, 24 April-10 August 2008, p. 5.
[66] The Festival Pattern Group was coordinated by Mark Hartland Thomas, Chief Industrial Officer at the Council of Industrial Design. See: M. Hartland Thomas, *The Souvenir Book of Crystal Designs. The fascinating story in colour of the Festival Pattern Group*, Typographical Design, London 1951.
[67] Rowlands worked as an aircraft fitter during War World Two. In 1959 he set up his own company and became one of the first British industrial designers to work with plastics. Some of his most successful inventions were Superbath, a portable baby bath (Design Council Award in 1958) and the Trimphone telephone (Design Council Award in 1966).

Union of Crystallography conference, held in Stockholm, the wife of another well-known scientist, Max Perutz (1914-2002), wore a dress patterned with a reproduction of horse methaemoglobin. An example of evening dress with a pattern that reproduced Beryl 8.9 lace, is provided with figures 9 and 10; the dress was worn by Alice Bragg, wife of the physician Lawrence Bragg (1890–1971), that will be mention in the next paragraphs in connection with the DNA' discovery.

The similarities between the "Exhibition of Science" and "Growth and Form" were not only in the topics presented. While the grid with Thompson's models shown at the ICA was quite original and appeared as a modern sculpture itself, the sequence of windows located in the gallery was reminiscent of the one presented at the Science Museum. These connections are not surprising given that Brumwell, as well as being a friend of Herbert Read[68] and connected with Megaw, was on the committee of "Growth and Form" at the same time as he was engaged with the Festival of Britain. Jacob Bronowski also worked on the two events; he was deeply involved in the "Exhibition of Science" as caption writer and as a contributor to the catalogue.[69] At the time, Bronowski was becoming a well-known figure to the British public and played a key role in the circulation of scientific knowledge. In 1951 one of his most popular books was published, "The Common Sense of Science", which formalised the notion that science and the arts share the same imaginative vision, a concept that was very much alive in the format of "Growth and Form". On the 2nd August of 1951, while the exhibition was taking place, Bronowski was invited to the ICA to deliver a lecture under the title "The Shape of

[68] Along with Misha Black and Milner Gray (1899–1997), Bromwell founded the Design Research Unit in 1943, one of the first British design consultancies. Read was associated with the DRU from 1943 to 1968.
[69] J. Bronowski, "The Story the Exhibition Tells", in *Exhibition of Science*, exh. cat., Science Museum, London 1951, pp. 7–38.

Science in the Arts", which provided further clarification of his conceptions.[70] Along with Bronowski, another well-known scientist at the time was the English astronomer and mathematician Fred Hoyle (1915–2001), who took part in a series of radio talks on astronomy for the BBC and collected in "The Nature of the Universe".[71] Hoyle might have had some influence over the selection of images for the astronomy section of "Growth and Form", and later on he caught the attention of Reyner Banham.[72]

Along with radio and TV programmes, the Science Museum itself played a great role in the popularisation of scientific knowledge. Originally founded in 1857 from the collection of the Royal Society of Arts and items from the Great Exhibition, the Science Museum was opened to the public in 1909. It was organized by Sir Richard Allison (1869-1958) between 1919 and 1928 with a collection that included more than 300,000 items, gathered over the years, and divided into technology, machines and science. During the Second World War most of the collections were put into storage away from London, and the Museum did not reopen until 1950, ready to host the "Exhibition of Science" in 1951.[73]

For some of the post-war generation of artists, science museums had the same importance that ethnographic

[70] *ICA Bulletin* n. 14, August 1951.

[71] F. Hoyle, *The Nature of the Universe – a series of broadcast lectures*, Basil Blackwell, Oxford 1950. Hoyle became well known thanks to his contribution to stellar nucleosynthesis theory, which refers to evolving stars and the assembly of the natural abundances of the chemical elements by nuclear reactions. Along with other theoretical physicists – William Alfred Fowler (1911–1995), Margaret Burbidge (b. 1919) and Geoffrey Burbidge (1925–2010) – Hoyle developed a theory on how the chemical elements in the universe were formed. The discovery was reported in "B2FH papers", named after the initials of the four authors.

[72] R. Banham, "A Model Essay upon the Variety of Anticipation as Exemplified in the Works of Fred Hoyle, Genius", in *Architects' Journal*, Vol. 133, No. 3441, March 1961, pp. 413–415.

[73] P. J. T. Morris (ed), *Science for the Nation*, Palgrave Macmillan, London 2010.

museums had for the generation of Henri Matisse (1869-1954), Maurice de Vlaminck (1876-1958), Georges Braque (1882-1963) and Pablo Picasso.[74] As in the first phase of modernism, in the 1950s any new branch of knowledge was seen by visual artists, photographers, designers, architects and critics as an endless source of inspiration. Paolozzi, for instance, started to visit the Science Museum in Paris in 1948, and at the time of his training at the Slade School of Art, he became a regular visitor of the Science Museum in London, along with Henderson. Amongst members of the Independent Group it was probably Henderson who had the greatest interest in science. In 1935 he studied biology at Chelsea Polytechnic and began a life-long interest in the microscope. He also enjoyed taking part in conversations about science, and Professor John Desmond Bernal (1901–1971) held great appeal for him with his talk about spaceships. Bernal was also considered a pioneer in X-ray crystallography and in molecular biology.

In the years that followed the Festival of Britain, other discoveries were to change the vision of the world held by scientists and the general public. In 1953 James Watson (b. 1928) and Francis Crick (1916–2004) suggested the double helix structure of DNA, based upon the pioneering studies of Rosalind Franklin (1920-1958).[75] The discovery was supported by Lawrence Bragg, who announced it at a Solvay conference on proteins, which took place in Belgium (8 April 1953), and extensively explained the finding during a talk given at Guy's

[74] W. Rubin (ed.), *"Primitivism" in 20th Century Art: Affinity of the Tribal and the Modern*, exh. cat., Museum of Modern Art, New York, 27 September 1984–15 January 1985. S. Price, *Primitive Art in Civilized Places*, University of Chicago Press, Chicago 2001.

[75] A. Sayre, *Rosalind Franklin and DNA – The First Full Account of Rosalind Franklin's Role in the Discoveries of the double-helix structure of DNA*, Norton & Company, New York 1975; B. Maddox, *Rosalind Franklin: The Dark Lady of DNA*, Harper Collins, London 2003.

Hospital Medical School in London (14 May 1953).[76] Meanwhile, Henderson, Paolozzi and Alison and Peter Smithson were working on the exhibition "Parallel of Life and Art", which opened in September 1953 at the ICA.[77] The exhibition was a true expression of the four artists, without any direct involvement of scientists, and it is noted for its original setting being more radical than the previous one. The exhibition occupied all the rooms available at the ICA, with images arranged on walls, ceilings and floors (Fig. 12 and 16). The 122 pictures selected for the exhibition embraced a wide variety of topics, classified as "Anatomy", "Architecture", "Art", "Calligraphy", "Date 1901", "Landscape", "Movement", "Nature", "Primitive", "Scale of Man", "Stress", "Stress Structure", "Football", "Science Fiction", "Medicine", "Geology", "Metal" and "Ceramic". The concept of "Anatomy", for instance, was used in an broad sense and included a "Dissection of a frog" (taken from the Encyclopaedia Montandon) and "Two Human Anatomies", 1298 & 1399 (Lancelot Hogben, "Cave Art to Cartoon Art"), while in the "Architecture" section the set of images included "L'Arme de Salut" from Le Corbusier and the Temple of Neptune in Paestum. The use of X-Ray images recurred in several pictures, as in "Radiography of a Jeep" ("Anatomy" section, courtesy Kodak Ltd.) and in the picture chosen for the catalogue's cover: the X-Ray profile of a man who is shaving off his beard (Fig. 11). As underlined by Victoria Walsh,[78] the latter came from "Vision in Motion" (1947) by Laszlo Moholy-Nagy.[79] From the radiograph it is possible to

[76] R. Calder, "Why You Are You. Nearer Secret of Life", in *The News Chronicle of London*, 15 May 1953.
[77] *Parallel of Life and Art*, exh. cat., Institute of Contemporary Arts, London, 10 September–18 October 1953.
[78] V. Walsh, *Nigel Henderson. Parallel of Life and Art*, exh. cat., Suffolk, 27 September–25 November 2002, p. 96.
[79] Moholy-Nagy was a well-known figure in the ICA context. In collaboration with RIBA, at the Institute of Contemporary Arts, in May 1950 Sybil Moholy-Nagy (1895–1946) gave a talk on the work of Moholy-Nagy. E. Hight, *Picturing Modernity: Moholy-Nagy and Photography in Weimar Germany*, MIT Press, Cambridge, Mass., 1995. The picture of the Man shaving was

recognise the mechanism of the shaver and the man's ring and glasses.

The interest in X-Ray pictures found in "Parallel of Life and Art" was one of the aspects that had also fascinated artists from the first phase of Modernism. In the first decades of the twentieth century, as well as Moholy-Nagy, the French artist Francis Picabia (1879-1953)[80] and the Norwegian painter Edvard Munch (1863-1944) also made use of X-rays[81] and in 1921 the American artist Man Ray began making his "rayographs". As for Henderson, Paolozzi and the Smithsons, the personalities involved in the first phase of Modernism were attracted by new possibilities of vision and perception of the world, thanks to technical advancements in photography.

"Vision in Motion", along with "Language of Vision" by György Kepes (1906-2001),[82] which has already been identified as a source of inspiration especially for Henderson,[83] can be effectively defined as one of the possible starting points for "Parallel of Life and Art", and not only for its visual content. Moholy-Nagy considered "arts as an integral part of our existence" and his book "takes as its basic premise the unity of the arts with life".[84] This last connection between arts and life

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taken at the Westinghouse Research Laboratory, Bloomfield, New Jersey, as reported by Moholy-Nagy in *Vision in Motion*, Paul Theobald, Chicago 1947, p. 253.

[80] L. Dalrymple Henderson, "Francis Picabia, Radiometers, and X-Rays in 1913", in *The Art Bulletin*, Vol. 71, No. 1 (Mar., 1989), pp. 114-123; B. Clarke and L. Dalrymple Henderson (eds), *From Energy to Information: Representation in Science and Technology, Art, and Literature*, Stanford University Press, Stanford 2002.

[81] Lampe A. and Cheroux C., *Edvard Munch: The Modern Eye*, exh. cat., Tate Modern, London 28 June - 14 October 2012.

[82] Kepes was a painter, designer, educator and theorist. See Kepes, G.: *Language of Vision*, Paul Theobald, Chicago, 1944; *The New Landscape in Art and Science*, Paul Theobald, Chicago 1956. See also *Vision + Value*, six anthologies edited by Kepes himself between 1965-1966.

[83] V. Walsh, *Nigel Henderson*, op. cit., pp. 89-107. In the essay written by Kepes there are less visual connections with *Parallel of Life and Art* than in *Vision in Motion*. Furthermore, *The New Vision* (1928) by Moholy-Nagy was another possible reference for the exhibition.

[84] L. Moholy-Nagy, *Vision in Motion*, p. 5.

might have inspired the final title chosen by Henderson, Paolozzi and the Smithsons for their exhibition at the ICA, after the first choices considered, "Sources" and "Documents 53".
The aim of Moholy-Nagy with this book was to present the work done at the Institute of Design in Chicago, by reporting its methodological approach, its educational programmes and an overall integration of design with visual arts. Moholy-Nagy stressed also the importance of the connection between art and science.[85] In a contemporary society, fully advanced in science and technology, and in the perception of common people, this connection was becoming more important, even if quite often recalled in a very generic way, as by Moholy-Nagy himself. The attempt to achieve a synthesis between these two opposite fields, was one of the aims of "Parallel of Life and Art": "The exhibition will provide a key - a kind of Rosetta stone - by which the discoveries of the sciences and the arts can be seen as aspects of the same whole".[86]

Beyond its theoretical content, the book written by Moholy-Nagy provided a greater source of images for "Parallel of Life and Art", from textures, aerial views, stroboscopic photographs, works of visual arts, design objects, architectural projects and several other aspects linked with society and progress. Beyond the picture of the man shaving, taken directly from the book, or the whole interest for X-Ray pictures manifested in "Vision in Motion", other references might be found in two photos made by Henderson: the hand print and the coffee grounds (both included in "Landscape"). A print of Kandinsky's right hand and a photograph of the aroma of a coffee bean made by Josef Breitenbach (1896-1984) in 1940 (Fig. 13), were in fact both

[85] L. Moholy-Nagy, "Art and Science", in *Vision in Motion*, op. cit., p. 31-32.
[86] Published in C. Lichtenstein and T. Schregenberger (eds), op. cit., p. 39 (from Alison and Peter Smithson Archive, London).

included in Moholy-Nagy's essay.[87] Other references can be found by looking at the aerial views (Fig. 15)[88] and a sequence of movements (Fig. 14),[89] presented in both "Parallel of Life and Art" (air views of Erbil in "Architecture" and of Grimsby in "Calligraphy", both from Aerofilms copyright; "Pigeons flying" and "The Cyclist", both in the section "Movement", respectively from the National Geographic Magazine and E.J. Marey) and in "Vision in Motion" (Aerial views in figs. 11, 42, 185; chapter "Space-Time Problems", pp. 244 - 269).

To move from a close up to a more general view, it is possible to assert that, in the words of Toni del Renzio, "the shape and scope of this exhibition certainly reflect that boundless energy, restless curiosity, insatiable thirst for the new",[90] that the four personalities behind "Parallel of Life and Art" had. If the contribution made by Henderson was at least in part inspired by "Vision in Motion" or by "Language of Vision", it would be intriguing to consider the other sources selected by Paolozzi and by the Smithsons. Although there are several contemporary and retrospective statements made by the four, which clarified their attitude in sharing "a common working aesthetic",[91] there is no documentation that explains exactly

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[87] L. Moholy-Nagy, *Vision in Motion*, op. cit., p. 37 and p. 182.

[88] Another is E.A Gutkind, *Our World from the Air*, 1952, mentioned by D. Kirkpatrick, "The Artists of the IG: Backgrounds and Continuities", in D. Robbins, op. cit., pp. 207–211.

[89] Capturing animal and human movement was first achieved by Eadweard James Muybridge (1830–1904) and then by several others, including Edgar Degas (1834–1917) and Marcel Duchamp (1887–1968). The latter with his *Nude Descending a Staircase, No. 2* (1912), was included in Moholy-Nagy, *Vision in Motion*, p. 249. See: R. Kendall and J. De Vonyar, *Degas and the Ballet: Picturing Movement*, exh. cat., Royal Academy, London 17 September - 11 December 2011; P. Prodger, *Time Stands Still: Muybridge and the Instantaneous Photography Movement*, exh. cat., The Cleveland Museum of Art, Cleveland 16 November 2003 - 25 January 2004; A. Schwarz, *The Complete Works of Marcel Duchamp*, 2 vols., Delano Greenridge Editions, New York 1997.

[90] T. del Renzio, "Portrait of the Artist No. 120", in *Art News and Review*, 5 September 1953.

[91] Reported by V. Walsh, *Nigel Henderson*, op. cit., p. 92, from Henderson Collection, Tate Archive.

who selected what and without any clues it is impossible to define this aspect. However, it is still possible to formulate a couple of considerations on the choices made. The first one is about the lenders. A quarter of them were, in fact, magazines – *Art News, Life, American Vogue, National Geographic* and several others[92] – the kind of material periodically reviewed by the whole group, especially by Paolozzi, who flicked through the pages to collect images for his Scrap Books.[93] Others lenders were museums (Museum of Modern Art in New York and Science Museum, British Museum, Victoria and Albert Museum and Imperial War Museum in London), real museums, which inspired the 'imaginary' one recalled by Henderson with the reference to the *musée imaginaire* theorised by André Malraux (1901-1976), seen in his flat in Paris in Fig. 17.[94] The second consideration to make is about the choices made in the field of visual arts, which matched the connotation of Brutalism, formalised by Reyner Banham with effective examples taken from "Parallel of Life and Art".[95] In his article Banham mentioned the Italian artist Alberto Burri (1915-1995),[96] the French artist Jean Dubuffet (1901-1985)[97] and the American artist Jackson Pollock (1912-1956) as examples of foreign artists to include in the New Brutalism, along with Henderson, Paolozzi and the Smithsons. Pictures of paintings by Burri and Dubuffet and a photograph of Pollock in his studio

[92] The list is reported along the description on "Parallel of Life and Art" catalogue and it is schematized in A. Massey and G. Muir, op. cit., p. 91.
[93] R. Riley (ed.), *Eduardo Paolozzi. Artificial Horizons and Eccentric Ladders Works on Paper, 1946-1995*, exh. cat., British Council, London 1996.
[94] A. Malraux, *Le Musée imaginaire*, Skira, Paris 1947. See: V. Walsh, *Nigel Henderson*, op. cit.
[95] R. Banham, "The New Brutalism", in *Architectural Review*, Vol. 118, No. 708, December 1955, pp. 355-361.
[96] In 1965 a painting by Burri, *Sacking and Red* (1954), would be purchased by Tate Gallery (R. Alley, *Catalogue of the Tate Gallery's Collection of Modern Art and other than Works by British Artists*, Tate Gallery and Sotheby Parke-Barnet, London 1981, p. 86), while his first major retrospective in Britain was held in 2012 (M. Duranti, *Alberto Burri: Form and Matter*, exh. cat. Estorick Collection, London 13 January–7 April 2012).
[97] *Jean Dubuffet - paintings, drawings and sculptures*, exh. cat, Institute of Contemporary Art, London 29 March–30 April 1955.

making drip paintings, were in fact selected for the exhibition at the ICA. In "Parallel of Life and Art" there were several other suitable pictures to fit in the New Brutalism that Banham had in mind, such as the excavated figures from the ruin of Pompeii, a human head carved in whalebone and the two human anatomies.

In the end, while "Growth and Form" had a truly didactic scientific aim, "Parallel of Life and Art" was an expression of a popularisation of science, in a way that would be fully manifested by former members of the Independent Group during the 1950s. As a whole, the presence of a wide repertoire of images in the exhibition curated by Henderson, Paolozzi and the Smithsons – from science to nature, from architecture to anatomy – was a compendium of knowledge, a cultural investigation of the world akin to a *Wunderkammer* or a cabinet of curiosities from the seventeenth century. As for the collectors from the past, the chaotic impression given by both the casualness of the images selected and the exhibition arrangement, could be seen as a reflection of the variety of interests that the postwar generation had for new fields of knowledge. With their exhibition Henderson, Paolozzi and the Smithsons applied the notion of "As Found" not only to the objects but also to the generic understanding of reality.

2. Machine

"There is a demon in the machine, a tendency towards evil and death that has constantly to be dealt with. The end of the machine is to reproduce endlessly. The rhythm of the machine is repetitive, a dead-beat, stupid, mindless. We invent machine to reproduce, and at one we have to think of how and where to stop it, or we are lost".[98]

The disapproval and the scepticism expressed in 1955 by the modernist architect Maxwell Fry was one of the few voices of opposition against the machine.

A clear manifestation of the interest in various kinds of machines was expressed, in fact, by "Man, Machine and Motion", an exhibition once again organized by Richard Hamilton and held in 1955, first in Newcastle at the Hatton Gallery in May and then in London at the ICA in July. The exhibition included more than 200 images of "man in motion-machine", as described by the press release, from Renaissance drawings to innovative planes and automobiles.

Documents held at the Tate Library and Archive show that during the organization of the exhibition provisional titles were used - "Human motion in Relation to Adaptive Appliances", "Adaptive Mechanism. A Mythology of Mechanism. The Old Artificer" and "Adaptive Appliance". These were probably less effective than "Man, Machine and Motion", but communicate the concept behind the exhibition.[99] The word "Adaptive" recurred in all three titles for a simple reason: in an exhibition in which the machines and the appliances were seen as an extension of the human body, the adaptation of man to them and of them to man was consequential. Clearly, the other key

[98] M. Fry,"Walter Gropius", in *Architectural Review*, March 1955, Vol. 117, No. 699, pp. 155-157.

[99] Tate Library and Archive: "Human motion in Relation to Adaptive Appliances" (Letter from Penrose to Hamilton, 17 March 1954, TGA 955.1.12.70, 4/23), "Adaptive Mechanism. A Mythology of Mechanism. The Old Artificer" (no reference, no date, TGA 955.1.12.70, 5/23) and "Adaptive Appliance" (Letter from Gowing to Penrose, 28 April 1954, TGA 955.1.12.70, 6/23).

word was "Appliance", used as synonymous with machine. In any case, the final title exemplifies the general purpose of the exhibition: to present machines as instruments that let man move forward, looking for the unknown, in the depths of the ocean, as in space. According to the press release, while '"Growth and Form" (1951) dealt with the visible evidence of organic structures in nature, "Man, Machine and Motion" deals with the pictorial record of the structures which man has created to extend his powers of locomotion and to explore regions of nature previously denied to him".[100] This is why in the exhibition man is seen as deep-sea diver (Fig. 20), as spaceman, as aviator or as racer (Fig. 21).

Once again, while the exhibition primarily had a visual aim, the catalogue led us through the exhibition's criterion. The introduction was written by Hamilton and the British artist Lawrence Burnet Gowing (1918–1991), Professor of Fine Art at King's College London, and involved in the overall organisation of the exhibition. Reyner Banham wrote the notes and the comments associated with the illustrations and had probably a key part in the choice of the material. The texts written by Banham had a systematic approach giving attention to the history of each single appliance and machine listed in the catalogue and presented in the show. If Hamilton acted as curator, responsible for the general installation of the exhibition and for the visual disposition of the pictures, Banham had the role of historian, as evidenced, indeed, in the catalogue.

The images selected were divided into the following categories: "Man in the Street", with pictures of bikes, cars and motorbikes, from the first prototypes to the 1950s models; "Man in the Water", from the primitive diving suits drawn by Francesco di Giorgio Martini (1439–1501) to a one-man submarine (Fig.

[100] "Man, Machine and Motion", press release, Tate Archive, Institute of Contemporary Arts collection, TGA 955.1.12.70, 2/23.

19); "Man in the Air", with the early studies for flying made by Leonardo da Vinci (1452–1519) to modern planes; "Man in Space", with space suit, equipment and the latest models of space shuttles.

The choices made in the catalogue and the subsequent explanations seemed to be influenced by several factors. One of them was the concept of man seen, as in the Renaissance period, at the centre of the universe. References to the Renaissance were given, with the mention of Leonardo in the section "Man in the Air" and the Italian architect and theorist Francesco di Giorgio, viewed as "Uomo Universale" in the section "Man in the Water". The expression, employed by Banham in the catalogue and used by him several times over the years, was normally applied to a special man, able to move from one field to another. The term was normally adopted to identify several Renaissance figures like Francesco di Giorgio or Leonardo da Vinci, perfect examples of the combination of visual artists, architects and scientists. This notion would meet the ambition expressed in the 1950s to combine in a single individual the scientist and the visual artist, as declared by Jacob Bronowski through talks and exhibitions and by several others influential figures, as stated from 1956 by the versatile Hungarian-American György Kepes.[101]

The centrality of man in the visual arts, architecture and design was reinforced in the 1950s with the publication of "Le Modulor" written by Le Corbusier – who, in the 1920s, had reimagined houses as "machines for living in"[102] – in 1948 and followed by "Le Modulor 2" in 1955. The first version of the

[101] See the previous chapter.

[102] The French expression is "Une maison est une machine-à-habiter", in Le Corbusier, *Vers une architecture*, G. Cres, Paris 1923 [English version: *Towards an Architecture*, Frances Lincoln, London 2008, originally published in 1927].

essay was translated into English in 1954, while the second would appear in Britain in 1958.[103] The text was also analysed by the British magazine *Architectural Review*, of which Banham had been Associate Editor since early 1950s.[104] In "Le Modulor" Le Corbusier formalised the use of the human body as a proportional scale for architectural projects, based on the work done by the Latin architect Marcus Vitruvius Pollio (80 B.C.-15 B.C.), well-known for "De Architectura", a treatise divided into 10 volumes, dedicated to the Emperor Augustus (63 B.C.-14 A.D.) and probably written between 29 and 23 B.C. The text had great influence during the era of Renaissance Humanism and was studied, quoted and put into practice by artists and theorists like Leonardo and Francesco di Giorgio, as well as Lorenzo Ghiberti (1378-1455), Leon Battista Alberti (1404-1472), Raffaello Sanzio (1483-1520), and many others. Beyond Vitruvius, Le Corbusier also used the studies made by Alberti and Leonardo. In the end, "Le Modulor" was based on two proportional systems: the mathematical sequences theorised by the Italian mathematician Fibonacci (1170-1240),[105] and the Golden standard.[106] By using them, Le Corbusier wanted to harmonise human living spaces and applied "Le Modulor" to his architectural projects, such as the Unité d'Habitation (Marseille, 1946), Notre Dame du Haut (Ronchamp, 1955), buildings in Chandigarh (India, 1950s) and the Carpenter Center for the Visual Arts at Harvard University (Massachusetts, 1962). "Le

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[103] Le Corbusier, *The Modulor: A Harmonious Measure to the Human scale, Universally Applicable to Architecture and Mechanics*, Birkhäuser, Basel and Boston 2004. The relationship between Banham and Le Corbusier will be discussed on the third part of this study.

[104] P. Collins, "Modulor", in *Architectural Review*, July 1954, Vol. 116, No. 691, pp. 5-8.

[105] Leonardo Pisano, called Fibonacci, was famous for a sequence of number obtain with the addition of the two previous number (ex.: 1, 2, 3, 5, 8, 13, 21, 34...). From the end of the 1960s the Fibonacci's sequence were frequently used in works of the Italian artist Mario Merz (1925-2003), one of the main figure of the Arte Povera.

[106] Called also "Divine Proportion" or "Fidia's constant", Golden Standard shows the relationship between two unequal lengths, from which the greater is the medium proportion between the minor and the sum of the two.

Modulor" had its graphic representation in a male silhouette, seen with one arm raised. Next to the figure there are two vertical measurements, one in red, based on the figure's navel height and one in blue, based on the figure's total height (Fig. 23).

Beyond his writing, Le Corbusier himself was already a familiar figure at the ICA. In 1951 he was invited as guest speaker at the opening of "Growth and Form" and attended the Institute again in 1953 for his solo exhibition.[107] Nevertheless, the architect was not the only one responsible for renewed attention to the Renaissance as manifested in "Man, Machine and Motion". The famous essay "Architectural Principles in the Age of Humanism" written in 1949 by Rudolf Wittkower (1901–1971) could be seen, in fact, as a further reference for the exhibition. At the time of the publication, the German art historian was in London teaching at the Warburg Institute and was well-known at the ICA. He and his publication were one of the main subjects of the lecture given in June 1958 by Nikolaus Pevsner (1902–1983), Professor at the Courtauld Institute of Art, London and the doctoral supervisor of Banham. The other theme of the talk was "Space, Time and Architecture", a book written by Sigfried Giedion (1888–1968) in 1941 which was a crucial publication for the former members of the Independent Group.[108]

Le Corbusier, Giedion and Wittkower along with James Ackerman (b. 1919), Max Bill, Luigi Cosenza (1905–1984), Gillo Dorfles, Lucio Fontana, Carlo Mollino (1905–1973), Ernesto Nathan Rogers, Bruno Zevi (1918–2000) and others were all involved in "Divina Proporzione", the symposium that took

[107] *Le Corbusier: Painting, Drawing, Sculpture, Tapestry, 1918–1953*, exh. cat., Institute of Contemporary Arts, London, 23 April–17 May 1953.
[108] The title of the lecture was "Art History for art students", Institute of Contemporary Arts, 26 June 1958, in *ICA Bulletin*, June 1958, No. 88, Tate Archive, 955/14/9.

place in 1951 at the IX Triennale in Milan.[109] The title of the conference was taken from the book written in 1497 and published in 1509 by the Renaissance mathematician Luca Bartolomeo de Pacioli (1445–1517). As "Le Modulor," the main criterion behind the proportion scale promoted by Pacioli was the Golden standard. The conference was organized in connection with the exhibitions "Studi sulle Proporzioni" (Fig. 22 and 24) and "Architettura, misura dell'uomo", both of which took place in the IX Triennale.[110] The first was set up by the architect Francesco Gnecchi Tuscone (b. 1924) who built light, square metal grids that held up pictures, and windows showing manuscripts from the collection of Carla Marzoli and from institutions.[111] The second exhibition was curated by Ernesto Nathan Rogers who, with the cooperation of Vittorio Gregotti (b. 1927) and Giotto Stoppino (1926–2011), designed moving panels disposed in different positions: suspended from the ceiling, located next to walls and on the floor.[112] Most likely, it was a combination of the setting of these two exhibitions, "Studi sulle Proporzioni" and "Architettura, misura dell'uomo", that had an impact on Hamilton, first for "Man, Machine and Motion" (Fig. 18) and, later, for "An Exhibit".[113] Following on, praise for "Architettura, misura dell'uomo" was provided by

[109] The Triennale was opened from May to November 1951. The congress was organized between 27 and 29 September by Carla Marzoli, owner of an antique bookshop in Milan. A.C. Cimoli and F. Irace: *La Divina Proporzione. Triennale 1951*, op. cit.; "Triennale 1951: Post-War Reconstruction and 'Divine Proportion'", op. cit..

[110] "Lo studio delle proporzioni", in *Domus*, No. 261, September 1951, pp. 14–16.

[111] The following manuscripts, amongst others, were shown: "Trattato di architettura" by Francesco di Giorgio; "De Perspectiva Pingendi" by Piero della Francesca; "De Architectura" by Vitruvius; "De artificialis prospectiva" by Le Viator (1445–1524). A connection between the exhibition "Studi sulle Proporzioni" and "Man, Machine and Motion" was suggested by V. Walsh in "Seahorses, Grids and Calypso: Richard Hamilton's Exhibition-making in the 1950s", in *Richard Hamilton*, op. cit., pp. 69–70.

[112] E.N.R., "Architettura, misura dell'uomo", in *Domus*, No. 260, July–August 1951, p.1.

[113] "An Exhibit", exh. cat., Hatton Gallery, Newcastle, July 1957 and at the Institute of Contemporary Arts, London, August 1957.

Toni del Renzio in his review of the Italian IX Triennale, with a precise focus on the setting:

> The room [...] organized by Ernesto Rogers who, with the simplest means, has achieved the maximum effect. Informative material, artistic illusions and plain coloured rectangles are suspended in space, and the spectator, passing among them, derives their message without any need of captions, 'Architettura, misura dell'uomo'. This room is the summation of the contribution of Italian genius to display, using as it does naked and unashamed elements, restrained construction, the fullest exploration of the material, and above all conceived with conviction.[114]

With its "naked and unashamed elements" the exhibition at the Triennale let the pictures talk to the viewer without adding any labels or captions. As is well-established, the same solution was adopted by the organizers of the exhibitions discussed here: "Man, Machine and Motion", "Growth and Form", "Parallel of Life and Art" and "This is Tomorrow".

In Milan, in 1953, two years after the IX edition of the Triennale, opened the National Museum of Science and Technology with an exhibition devoted to Leonardo.[115] On display there were manuscript treatises written by the Italian polymath, drawings of his engineering projects and models of various machines, made for the exhibition and taken from his books. The permanent collection in the museum placed great emphasis on transport systems, from the early versions of bikes, motorbikes, cars, planes and submarines. The division of the museum's sections resembles the overall setting of "Man, Machine and Motion", though it is difficult to say whether Hamilton or Banham were aware of it. However, during his PhD studies, Banham went to Italy to conduct research on Antonio Sant'Elia and he went to Como to see the original drawings by

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[114] T. del Renzio, "IX Triennale, Milan", in *Architectural Review*, Vol. 110, No. 660, December 1951, pp. 396-398.

[115] Sagredo, "I cimeli del progresso", in *Civiltà delle macchine*, Vol. I, No. 2, March 1953, pp. 67-68.

the architect, hosted at the Pinacoteca Civica.[116] He also spent some time in Milan and may have visited the National Museum of Science and Technology.[117]

Beyond the Milanese National Museum of Science and Technology, an interest in the historical development of transport systems, from trains to planes, was expressed even at London's Science Museum and by the British magazine *Design*, published from 1949 to 1999 by the Design Council. A brief history of the development of the motorbike, with attention to both the engines and the body, was provided, for instance, in 1951 with an article written by David Munro.[118] A fusion between man and motorbike was then illustrated in one of the following issues of the magazine,[119] while a comparison between several car models was offered by E. G. M. Wilkes in 1952.[120]

Returning to the ICA's exhibition, if the main aim of "Modulor" and of the Triennale conference was to find a right balance between human beings and space, the exhibition "Man, Machine and Motion" wanted to harmonise the relationship between human beings and machines. Undoubtedly, Renaissance Humanism was not the only stimulus. In "Man and Space", located in the last part of the catalogue, the pictures

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[116] At the time the Pinacoteca Civica in Como had 88 drawings made by Antonio Sant'Elia, bought in 1943. Over the years the collections of the museum have been enriched by donations and acquisitions, and the number of drawings has reached more then 200. L. Caramel, A. Longatti, and M.L. Casati, *Antonio Sant'Elia. La collezione civica di Como*, exh. cat.,Pinacoteca Civica, Como 24 March-14 July 2013.

[117] Banham recalled his first visits to Milan and Como in "Primitives of a Mechanized Art", in *A Critic Writes. Essays by Reyner Banham*, University of California Press, Berkeley; Los Angeles; London 1996, pp. 39-45 [First published in *The Listener*, No. 62, 3 December 1962, pp. 974-976].

[118] D. Munro, "Style on Two Wheels. A review of progress in motor-cycle", in *Design*, No. 25, January 1951, pp. 14–
17. Among the reproduction there is the Wolfmuller, produced in Germany and France from 1894 and hosted at the Science Museum, London.

[119] "Design a streamlined motor-cycle", in *Design*, No. 28, April 1951, p. 28.

[120] E.G.M. Wilkes, "Common Sense in car design", in *Design*, No. 44, August 1952, pp. 8–13.

selected come mainly from science fiction films and books. As reported in the text, stills were taken from the film "Destination Moon", winner of an Academy Award for Visual Effects in 1950 and produced by the Hungarian-born and American citizen George Pal (1908–1980). Other pictures for the section were borrowed from the American science fiction director Richard Carlson (1912–1977), famous for his "Riders to the Stars" (1954), Fig. 25 and 26, "The Magnetic Monster" (1953) and "Creature from the Black Lagoon" (1954), Fig. 27 and 28. As clearly stated in the catalogue, the section was also influenced by the German-American aerospace engineer Wernher von Braun (1912–1977), who developed rocket technology during Nazi Germany and who, after World War II, moved to the United States where he spent the rest of his life. He was responsible for the invention of the V-2 combat rocket, designed during the war. Additional references for that part of "Man, Machine and Motion" came from the American science fiction illustrator Chesley Bonestell (1888–1986), considered as the "Father of Modern Space Art" for his fascinatingly illustrated books.[121]

One of the other typologies of machines included in the exhibition and in the catalogue were cars. Now, in light of the fact that "Man, Machine and Motion" can be considered as an homage to updated technology, it is worth analysing what cars symbolised for society of the 1950s and then evaluate the attitude of Banham and Hamilton to them. Before the economic boom of the 1960s, cars held much appeal and fascination for the generation of the 1950s. At the time American cars were

[121] Bonestell illustrated the following books: "The Conquest of Space" written by Willy Ley in 1949; "Conquest of the Moon", written by Wernher von Braun, Fred Lawrence Whipple and Willy Ley in 1953; "The World We Live In", by Lincoln Barnett, 1955; "The Exploration of Mars", by Willy Ley, 1956.

included in songs,[122] comics[123] and science fiction,[124] as icons of popular culture, people really started to identify with them. While their fast engines were seen as a clever product of a new society, with their aerodynamic body they raised aesthetic issues and were evaluated as design products. Contemplated, admired, analysed and discussed by thinkers and scholars, they were part of the aesthetic debate around the concept of industrial design.[125] According to the prolific French philosopher Roland Barthes (1915-1980), cars had for his contemporary society the same value that the Gothic cathedrals had in the middle ages:

I think that cars today are almost the exact equivalent of the great Gothic cathedrals: I mean the supreme creation of an era, conceived with passion by unknown artists, and consumed in image if not in usage by a whole population which appropriates them as a purely magical object.[126]

With these words, written in 1957, Barthes started his essay dedicated to the Citroën DS, one of the iconic cars of the twentieth century. The car was manufactured from 1955 to

[122] A great success was "Rocket 88", written in 1951 by a band with a same name, and considered as the first rock and roll song. The title was inspired by the eponymous car, produced by Oldsmobile. Other popular songs were the commercial jingle "See the USA in Your Chevrolet", from 1949; the "Buick 59", by the American vocal group The Medallions, realised in 1954; "V-8 Ford Blues" by Mose Allison, recorded in 1961.

[123] Cars had a key role in famous comics, for example Batman with his futuristic Batmobile, appeared in 1939 and evolved during the decades. Comic strips about cars were periodically published in "CARToons Magazine", started in 1959 and based on automotive humour and hot rod artwork.

[124] The vision of the future promoted in the 1950s with science-fiction images included the presence of flying cars. In 1956 the Ford design studio built the Volante Tri-Athodyne, that would lift off the ground and move in the air. Then, real models with futuristic shape were produced by Automotive company, as the Ford FX Atmos (1954) and the Lincoln Futura (1955).

[125] Reactions to industrial design and definitions suggested for the new field, will be discussed in the next section of the thesis.

[126] R. Barthes, "The New Citroën", in *Mythologies*, Paladin, London 1972 [First published in 1957, "La nouvelle Citroën", in *Mythologies, Œuvres complètes. Livres, textes, entretiens 1942-1961*, vol. I, Seuil, Paris 2002, pp. 788-790: "Je crois que l'automobile est aujourd'hui l'équivalent assez exact des grand cathédrales gothiques : je veux dire une grande création d'époque, conçue passionnément par des artistes inconnus, consommée dans son image, sinon dans son usage, par un peuple entier qui s'approprie en elle un objet parfaitement magique"].

1975, designed by the Italian sculpture and industrial designer Flaminio Bertoni (1903–1964) and by the French aeronautical engineer André Lefébvre (1894–1964). Presented in France in 1955, the DS immediately caught the attention of the public and critics, thanks to its revolutionary shape, with a long stretched back and with extensive windows in the cockpit. The special value of the car was intrinsically contained in its name. The acronym DS stands, in fact, for "Désirée Spéciale" ("Special Wish") and its pronunciation in French, "Déesse", means "Goddess". The car was a success and can still be considered the masterpiece of French automotive manufacture. In 1955, at the Automobile Fair in Paris an enthusiastic public ordered 80,000 cars at a price of 940,000 francs, which was not exactly inexpensive. Two years later, in 1957, at the XI Triennale in Milan, the DS19 was exhibited as a sculpture and put on a stand, without wheels (Fig. 29). The car, included in the exhibition "Mostra internazionale dell'Industrial Design" sponsored by the Associazione per il Disegno Industriale (ADI), was surrounded by drawings of the project, proof of its sophisticated technology.[127] It was not the first time that cars had appeared at the Triennale. The Milanese exhibition had always given considerable attention to the transport sector and in 1954 devoted a whole room to the automobile, with the inclusion of the mini car "Isetta", a three-wheel car designed by the Italian engineer Ermenegildo Preti (1918–1986). Nevertheless, at the XI edition of the Triennale, the DS was outside its context, isolated and unusually positioned.

The innovative shape and the mythical value of the DS also attracted some of the former members of the Independent Group. In his "Gallery for a Collector of Brutalist and Tachiste Art", presented in 1958 for the Daily Mail's Ideal Home Exhibition at Olympia, London, Hamilton included in the space

[127] "XI Triennale", exh. cat., Palazzo dell'Arte, Milano, 27 July–4 November 1957.

a giant image of the car.[128] His project was a self-contained space with a functional pillar in the middle of the room that served as a cocktail cabinet, secretary desk and contained books and objects shelves. The chairs were plan by Harley Earl, chief designer of General Motors. On the walls and on the flooring were paintings and sculptures by Sam Francis (1923-1994), Franz Kline (1910-1962), Paolozzi and Hamilton himself. The aerodynamic Citroën DS19 appeared in a poster that showed a glass-windowed door with the car beyond (Fig. 30). At first glance the DS seems to be parked in the garden, with high trees in the background, suggesting that a fine collector of Brutalist and Tachiste art should also be attracted by one of the most emblematic cars of the decade.

As has already been said, as appeared in some pictures, a real Citroën DS19 was, instead, parked outside Alison and Peter Smithson's weekend home in Fonthill, Wiltshire that was bought in 1959 and underwent rebuilding until 1961 (Fig. 31).[129] The DS was not the only model from the French car manufacturers that the Smithsons owned. Over the years they had, in fact, also a Citroen ID, a Citroen ID Break and a Citroen CX. In any case, the affection for the DS19 and a new quality of driving experience through the 1960s and the 1970s, from London to Fonthill, lead Alison Smithson to write the original book "AS in the DS. An Eye on the Road", published in 1983 and designed in the shape of the car (Fig. 32).[130] In the book, as in the exhibition "Man, Machine and Motion", the car was used as

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[128] B. Highmore, "Richard Hamilton at the *Ideal Home Exhibition* of 1958: Gallery for a Collector of Brutalist and Tachiste Art", in *Art History*, Vol. 30, No. 5, November 2007, pp. 712-737.

[129] M. Risselada, "Solar Pavillion - Upper Lawn, Fonthill Estate - Tisbury, Wiltshire 1961 - 1962", in D. van den Heuvel and M. Risselada (eds), *Alison and Peter Smithson - from the House of the Future to a house of today*, 010 Publishers, Rotterdam 2004, pp. 152 - 165; "Upper Lawn Pavilion", in "As Found", pp. 194-211.

[130] A. Smithson, *AS in DS. An eye on the road*, Delft University Press, Delft 1983 (reprint, Lars Müller Publishers, Baden 2001). See: "AS in DS. An eye on the road," in "As Found", pp. 212-213.

an extension of the human body, as an instrument for looking at the environment throughout the length of the journey.

> This is a diary of car-movement recording the evolving sensibility of a passenger in a car to the post-industrial landscape. [...] In the last quarter of the twentieth century, we have inherited a literature of man and machine in nature but there is as yet no equivalent of the eighteenth century's understanding which penetrated all to the levels of society through the work of writers, artists, landscape designers, and architects.[131]

Even though the book is outside the chronological frame identified with the current work, it confirms a long-lasting attitude to the car already manifested by the Smithsons in a previous project: the documentary film made in 1957 for the International "Hauptstadt Berlin" Competition, that was awarded first prize. The initiative aimed to present urban projects to rebuild Berlin after the heavy devastation of the war and pre-dated the construction of the wall, erected in 1961. Along with a city plan, the scheme for the new Berlin was presented by the Smithsons in a short film, shot in London and directed by John McHale, with music written by Frank Cordell and comments made by Peter Smithson. London, as a paradigm of the new Berlin, was seen from the window of the car in motion, as in a Futurist painting.

Concerning Futurism, it is worth mentioning a comment made by Banham in the catalogue of "Man, Machine and Motion", when he presented the Lester-MG Sports two-seater car, produced in 1953. The British critic observed that updated photographic technology, enabled us to see pictures of cars in focus, despite the considerable speed they moved at and without the smudges showed by Futurist painters. The association between cars and Futurism is, indeed, appropriate. It was the Italian movement that put the car on an aesthetic podium after the renowned words written in 1909 by the

[131] A. Smithson, *AS in DS. An eye on the road*, op. cit., p. 1.

Italian poet Filippo Tommaso Marinetti (1876-1944) for the 'Founding and manifesto of Futurism':

> We affirm that the beauty of the world has been enriched by a new form of beauty: the beauty of speed. A racing car with a hood that glistens with large pipes resembling a serpent with explosive breath... a roaring automobile that seems to ride on grapeshot, is more beautiful than the *Victory of Samothrace*.[132]

Marinetti claimed that the superiority of cars compares to the Greek Hellenistic sculpture masterpiece, as we have seen. Barthes set the equivalence between cars and Gothic cathedrals, while Banham, as reported in the final part of the thesis, instead of using strong terms of comparison, admired automobiles and their speed and used them as a subject of aesthetic speculation. Beyond being considered as pieces of industrial design, cars were for the British scholar objects of desire. Banham was deeply attracted by automobiles made in USA, as confirmed later in the films "Reyner Banham Loves Los Angeles" (1972) and "The Fathers of Pop" (1979). In the previous decades he mentioned cars and motorbikes in various articles.[133] He was also fascinated by a less complex vehicle: the bike. A brief history of bicycles was provided in the catalogue of "Man, Machine and Motion", and Banham himself used to ride his bike on the London roads during the 1950s, as shown in pictures shot in that period.[134]

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[132] F.T. Marinetti,. "Manifeste du futurisme", *Le Figaro*, 20 February 1909 ["Nous déclarons que la splendeur du monde s'est enrichie d'une beauté nouvelle : la beauté de la vitesse. Une automobile de course avec son coffre ornée de gros tuyaux tels des serpents à l'haleine explosive... une automobile rugissante, qui a l'air de courir sur de la mitraille, est plus belle que La Victoire de Samothrace", trans. in English in *Futurism: An Anthology*, ed. by L. Rainey, C. Poggi and L. Wittman, Yale University Press, New Haven and London 2009, p. 51].

[133] R. Banham: "Vehicles of Desire", in *Art*, September 1955; "Industrial design e arte popolare", November-December 1955, Vol. III, No. 6, pp. 12-15 [published in English, "Industrial design and Popular art", in *Industrial Magazine*, March 1960 and reprinted with the title "A Throw-Away Aesthetic", in *Design by Choice*, op. cit., pp. 90-93]. "New Look in Cruiserweights", in *Ark*, No. 16, 1956, p. 44-47. See: "Reyner Banham - Aesthetics and Popular Art", in the third part of the present study.

[134] R. Banham, *Design by Choice*, op. cit., p. 84.

Hamilton was also under the spell of American cars, as revealed in "Hommage à Chrysler Corp.", a series of five paintings made in 1957 in which he reproduced several automobiles' details as associated with female body parts (Fig. 33).[135] The same correlation was suggested with "Hers is a Lush Situation", which was part of the series started in 1957; after all, the pairing of women and cars, stressed at the time by advertising campaigns and fashion magazines, was also made in 1957 by Toni del Renzio who proposed the combination between "sleek car and chic mannequin" in an article written for *Ark*, the magazine of the Royal College of Art in London.[136]

> It would be difficult to imagine a more wonderful place for a lady to sit in than the passenger seat of a new 1957 Cadillac. To be with, she is marvellously comfortable [The car or the lady?]. The seat cushions are soft and restful... the car's interior is wonderfully spacious... and every imaginable motoring convenience is close at hand. And how regal she feels! [The lady or the car?].[137]

In the varied ICA context, cars were seen with attention and curiosity, as turned out from various events connected with the subject. In 1957 four films - "Applied Automation", "Techniques for Tomorrow", "The American Road" and "The American Farmer" - made by the American Ford Motor Company, were screened at the Institute.[138] In 1962 in a discussion called "Design and the Body Arts", the American ergonomist Brian Shackel (1927-2007), Michael Farr, the editor of the magazine *Design*, the Welsh designer John

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[135] R. Hamilton, "Hommage à Chrysler Corp.", in *Architectural Design*, Vol. 28, No. 3, March 1958, pp. 120-121.

[136] T. del Renzio, "Shoes, hair and coffee", in *Ark*, No. 20, Autumn 1957, pp. 27-30 (brackets were included in the article). See also: A. Fletcher, "First impression of New York. Letter from America", in *Ark*, n. 19, 1957, pp. 36-39, with a reproduction of a Chevrolet on the first page and a mythical vision of the American cars.

[137] T. del Renzio, "Shoes, hair and coffee", op. cit., note 2, p. 30 (quoted from *Harper's Bazaar*, New York, March 1957).

[138] *ICA Bulletin*, No. 75, 25 April 1957.

Christopher Jones (b. 1927) gave a talk with the title "Car Controls", chaired by Roger Coleman.[139]

In the end, with its unusual topic, "Man, Machine and Motion" came to express a broader tendency of a decade, that was deeply attracted by new machines, considered by Independent Group's members as the expression of modernity. As a matter of fact, this attitude would not remain merely connected with the exhibition, but would have a further development. Society in the 1950s considered appealing not only modern transport systems but also everyday appliances. The tendency started, probably, in the United States in the years after War World II when American families purchased various kinds of goods such as their first refrigerator, radio and television set and other household electrical appliances. Mainly seen in the advertising pages of American magazines available in Europe, these objects were progressively introduced into European homes after recovery from the war. Among many expressions of vernacular art in the UK, the Festival of Britain played a key role in the spread of modern interior design and goods for a growing middle class. Nevertheless, the background of the Independent Group's members was mainly based upon American models, available through magazines and movies, rather than from the Festival of Britain. Beyond "Hommage à Chrysler Corp" and the other works made by Hamilton during his career and devoted to cars,[140] small appliances were reproduced in his works. The radio, television set and vacuum cleaner were clearly visible in his famous collage "Just what is it that makes today's homes so different, so appealing?", while a toaster would appear in "$he", realized in 1958 and, once again, associated with the female

[139] *ICA Bulletin*, No. 115, January-February 1962.
[140] M. Godfrey, P. Schimmel, and V. Todolí, *Richard Hamilton*, exh. cat., Tate Modern, London 13 February-26 May 2014.

body (Fig. 34).[141] Over the years, Hamilton became quite obsessed with vacuum cleaners, including them in several works, such as "Attic" (1995-96), "Chiara and Chair" (2004, Fig. 35) and in "Hôtel du Rhone" (2005), to mention a few of his later works in which he also showed an interest in the modern interior. Rather than being attracted by industrial products themselves, Hamilton was probably drawn by mass produced goods as icons of modernity.

From car to toaster, the new products available after the war symbolised several factors, including a desire to consume following the sacrifices of war, the expression of a modernity that had finally arrived and an aesthetic pleasure that was beyond mere utility. These tendencies had already occurred in the first decades of the twentieth century, not only with Futurism that was deeply attracted to cars, planes, motorbikes, trains, electric light and the modern city. Several other artists, filmmakers, photographers and architects, incorporated machines in their works and were fascinated by them. The mechanisms themselves were illustrated with gears and inner workings in the paintings, collages and photomontages made by Francis Picabia and Alexander Rodchenko (1891-1956). The repetitiveness of machines, criticised by Maxwell Fry and in the above quote, was used as key factor in the experimental Dadaist film, the "Ballet Mécanique" conceived between 1923 and 1924 by Fernand Léger (1881-1955), with the co-direction of the American filmmaker Dudley Murphy (1897-1968). The ballet lasted nineteen minutes and was made only with mechanical instruments. The inclusion of machines in artworks was also strong in the United States in this period.[142]

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[141] R. Hamilton, "An Exposition of $he", in *Architectural Design*, No. 32, October 1962, pp. 485-486.

[142] *The Machine Age in America, 1918-1941*, exh. cat., Brooklyn Museum, New York, 17 October 1986-16 February 1987.

Nevertheless, in the 1950s the interest in machines was not restricted to avant-garde personalities but was also found in wider society. The same notion of 'machine' was used with different purposes and generally referred to modernity. The Italian magazine *Civiltà delle macchine*, founded in 1953 and directed until 1958 by the Italian engineer and poet Leonardo Sinisgalli (1908-1981), used the word in its title. The magazine had the aim of presenting new discoveries and updated technologies, with comments given by poets, novelists, critics, artists, architects, designers, engineers, scientists and other scholars and experts. Banham used the expression emphatically in the title of his art historical essay, "Art in the Second Machine Age".[143] The expression "machine age" was also used to define the cutting edge personality of Richard Buckminster Fuller (1895-1983), defined in the ICA's bulletin as "one of the most influential and controversial personalities of the Machine Age", considered a "distinguished engineer, mathematician, inventor, designer, mechanic, writer and philosopher".[144] He was invited to the ICA for a lecture on 6 June 1959, "Architecture Man Plus", chaired by Banham. In the 1960s John McHale became Fuller's Research Associate in the World Resources Inventory and in the World Design Science Decade Centre, at Southern Illinois University, Carbondale.[145]

Beyond theoretical speculations, talks and publications, there was someone who actually proposed a paradoxical vision of the machine, far from the icons celebrated by Hamilton. The Italian artist and designer Bruno Munari (1907-1998) started, in 1933, to create "Useless Machines" sculptures, made with the

[143] R. Banham, *Theory and Design in the First Machine Age*, Architectural Press, London, 1960, reprinted by The MIT Press, Cambridge, Mass. 1980.
[144] Editorial, *ICA Bulletin*, June 1958, No. 88.
[145] J. McHale: "Buckminster Fuller", in *Architectural Review*, Vol. 120, No. 714, July 1956, pp. 13-20; *Buckminster Fuller: Makes of Contemporary Architecture*, George Braziller, New York 1962; with B. Fuller, *Inventory of World Resources and Needs*, World Resources Inventory, Southern Illinois University, Carbondale 1963.

assemblage of various objects (Fig. 36, 37 and 38). In the age of functionalism, where everything should have a purpose, Munari created something that admittedly does not have any practical application.[146] In addition to the fact that many of his design projects lacked functionality (the "Forks", the uncomfortable "Short visit chair"...), his machines were normally made with rudimentary materials and they were the antithesis of technology.[147] Here is his explanation:

> Let us first establish the function of the useless machine: that they are machines is not in doubt, given that the lever is a machine, commonly referred to as 'that piece of iron over there'. However, it is necessary to clarify the word 'useless': they are useless because they do not make anything, they do not eliminate labour, they do not save time and money, and they do not produce any commodities. They are nothing that colourful, mobile objects, specially designed to create a specific variety of combinations, movements, shapes and colour. Objects to look at in the way one looks at the drifting group of clouds after spending seven hours inside a factory full of useful machine.[148]

Munari wrote this text in 1937 and continued to produce "Useless Machines" until the end of the 1950s.[149] At the time, as will be explained in the second part of this study, critics and scholars were occupied with formulating theories and categories suitable for design products.

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[146] B. Munari, "Che cosa sono le macchine inutile e perché", in *La Lettura*, Vol. 37, No. 7, 1 July 1937 [English translation: "What Useless Machines Are and Why," in M. Hájek and L. Zafferano (eds), *Bruno Munari. My Futurist Past*, exh. cat., Estorick Collection, London 19 September - 23 December 2012, pp. 202-203].

[147] M. Hájek and L. Zafferano (eds), *Bruno Munari. My Futurist Past*, op. cit.

[148] B. Munari, "What Useless Machines Are and Why", op. cit., p. 202.

[149] In 1952 Munari published the "Manifesto of Mechanization" ("Manifesto del Macchinismo", Bollettino, No. 10, 1952) and the slogan "The Machine Must Become a Work of Art" ("La macchina deve diventare un'opera d'arte").

3. The Future

"The future of the past is the future
The future of the present is in the past
The future of the future is in the present"[150]

In New York, dreams about the future came together in 1939 with the World's Fair and its glowing perspective on "The World of Tomorrow", the theme chosen for the event that took place over three seasons, from April to October 1939.

Among the many exhibits and zones was "Futurama" which presented features of the world in the next 20 years (from 1939 to 1959), sponsored by the General Motors Corporation and planned by the industrial designer Norman Bel Geddes (1893-1958).[151] An event organized by a car manufacturer clearly promoted the assumption that cars would be widely used in the following decades. Consequently, infrastructures would have to be improved sufficiently to satisfy the increasing needs of the population. The show was mainly based on the growth of cities, with the advancement of motorways and automated highway systems. The technical content was affectively presented and "Futurama" became one of the most popular attractions of the fair and was visited by more than 30,000 people a day. It was, finally, revival after the slow recovery from the Great Depression.

The fascinating exhibits, with their overall futuristic appeal, were the expression of Modernism, associated not only with visual arts but also with architecture, infrastructure, transport

[150] J. McHale, *The Future of the Future*, op. cit., frontispiece.
[151] R. Marchand, "The Designers Go to the Fair II: Norman Bel Geddes, The General Motors "Futurama" and the Visit to the Factory Transformed", in *Design Issues*, Vol. 8, No. 2, Spring 1992, pp. 22-40; P.M. Fotsch, "The Building of a Superhighway Future at the New York World's Fair", in *Cultural Critique*, No. 48, Spring 2001, pp. 65-97; A. Morshed, "The Aesthetics of Ascension in Norman Bel Geddes' Futurama," in *Journal of the Society of Architectural Historians*, Vol. 63, No. 1, March 2004, pp. 74-99.

systems, modern furniture and industrial design objects. In a specific section, the fair considered, in fact, the rise of the American middle class, keen to have modern houses equipped with automatic dishwashers and other appliances available at the show. The representation of the new bourgeoisie was promoted by the commercial film "The Middleton Family at the New York World's Fair", produced by the Westinghouse Electric Corporation and screened during the fair. The Middletons - protagonist of a comic strips realised in conjunction with the Fair, as appear in Fig. 39 and 40 - were shown walking around exhibits and displays, in wonderment at the new cultural heroes: television sets and modern appliances. The fair was the starting point of America's consumerist era that would arrive in Europe only after the Second World War, during the years that are the focus of this thesis.

A similar situation would happen in Britain with the Festival held in London in 1951 and in Italy with the exhibition "La Forma dell'Utile", organized at the IX Triennale in Milan, also in 1951 and mentioned in the previous chapter. At the Festival of Britain, a house fully equipped and available to the mass populace was still very much a dream; nevertheless, the Festival posed the problem of modern interiors and furniture for a new middle class. The abstract motifs taken from biological and chemical structures and used for textiles and tapestries were exactly targeted at the bourgeoisie now recovering from the war. Similarly, "La Forma dell'Utile", at the IX Triennale, was showing in a specific way what industrial design was and, at the same time, was providing the upper middle class with examples of up-to-date objects to have in their modern flats. Compared to the United States, the Festival of Britain of 1951 and the 1950s editions of the Triennale in Milan were late manifestations of Modernism, which helps to explain the general enthusiasm for the future expressed in

Europe in the aftermath of the war years. As at the World's Fair of 1939 in New York, the Festival in London and the Triennale in Milan also aimed to present a better tomorrow, full of new discoveries, modern design and up-to-date objects.

An interesting link between the New York World's Fair and the Festival of Britain can be made by comparing the ephemeral constructions built for both events: "Trylon" and "Perisphere" in New York[152] and "Skylon" and "Dome of Discovery" in London, reproduced with Fig. 42 and 43. The latter were, most likely, inspired by the former, which were so popular that were reproduced in the background of the "World's Fair Comic", with at the first sight the newborn heroes: Superman, Batman and Robin (Fig. 41).[153] As expressions of the ongoing rhetoric about future, these structures were designed to impress the viewers with their symbolic and innovative structures. In New York, the Trylon had a spire shape and was 190m high, while the Perisphere had a diameter of 55m and hosted a model of a utopian city of the future. Together they were known as the "Theme Center", designed by architects Wallace Harrison (1895–1981) and J. Andre Fouilhoux (1879–1945), with interiors made by the celebrated American industrial designer Henry Dreyfuss (1904–1972). On the South Bank, the "Dome", meant to be the largest in the world with a diameter of more than 110m, was made of concrete and aluminium and designed by the British architect Ralph Tubbs (1912–1996).[154] The

[152] B. Cohen, *Trylon and Perisphere*, Inc. Publishers, New York 1989.

[153] Invented by the writer Jerry Siegel (1914-1996) and the artist Joe Shuster (1914-1992), Superman was published by DC Comics since 1933. Batman was created by the comic book artist Bob Kane (1915-1998) and by the writer Bill Finger (1914-1974) and appeared for the first time in May 1939 in *Detective Comics*. Robin was introduced few months later as supporter character. See: G. Jones, *Men of Tomorrow: Greeks, Gangster, and the Birth of the Comic Book*, Basic Book, New York 1995.

[154] Tubbs was assisted by Freeman Fox and Partners, a consulting engineers practice. The Dome was constructed by the Costain Group, a British construction and civil engineering company. The Dome, the Skylon and other buildings on the South Bank were dismantled in 1952. To celebrate

building was both an exhibit and an exhibition centre, presenting "British initiative in exploration and discovery is as strong as it ever was", an exhibition divided into the following sections: "The Land", "The Earth", "Polar", "Sea", "Sky", "Outer Space", "The Physical World" and "The Living World". Like other exhibits made for the Festival, the exhibition had, from one side, an educational aim and, from the other, the intention to celebrate the achievement of modern society.

The other ephemeral structure, the "Skylon", became, along with the "Dome", a symbolic depiction of the Festival of Britain. With a slender and cigar shape, 91m tall, it resembled a space rocket and was the sign of new possibilities, a forecast for the near future. All in all, the concept behind all these constructions was quite similar to the one manifested by the great exhibitions of the nineteenth century. Like the Eiffel Tower in Paris and the Crystal Palace in London,[155] these ephemeral buildings had a great impact on the public and remained in their memory for several decades as popular speculation about tomorrow.[156] In 1958, almost at the end of the decade, another construction would express this unconditional faith in science and technology: the Atomium, built in Brussels for the World's Fair, designed by the Belgian engineer Andre Waterkeyn (1917-2005) and architects André (1914-1988) and Jean Polak (1920-2012). The building had a shape of a unit cell of an iron crystal, enlarged 165 billion times; its 9 spheres, interconnected by

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the third millennium, the Millennium Dome was built on the Greenwich Peninsula. The structure was quite similar to the Dome of the Discovery, designed by the architect Richard Rogers in 1999.

[155] The huge Crystal Palace was built in London to host the Great Exhibition of 1851. The Tour Eiffel was erected in 1889 on Champ de Mars in Paris for the World's Fair organized in the same year.

[156] Souvenirs inspired by the Skylon and the Dome were available at the Festival, see: W. Goodden, "1951 Festival: a challenge to souvenir manufacturers", in *Design*, No. 22, October 1950, pp. 18-19.

giant tubes, have exhibition halls and public spaces in their 18m diameter.[157]

Following these considerations, it is possible to regard the New York World's Fair as the starting point for America's consumerism era and as a further expression of modernity. More than a decade later, Britain was progressively experiencing the same wave and was responding to several issues and questions. One was the need for modern objects and interiors, another was the necessity of clarifying what architecture and the visual arts should look like in the future. An attempt to answer this last question came from one of the landmark exhibitions of the twentieth century: "This Is Tomorrow", held between August and September 1956 at the Whitechapel Gallery in London.[158] The exhibition was "devoted to the possibilities of collaboration between architects, painters and sculptors - might appear to be setting up a programme for the future".[159] This was the main aim of the exhibition, as reported by Lawrence Alloway, in "Introduction 1. Design as a Human Activity", written for the catalogue. In the exhibition, cooperation between different fields is seen as essential for the future of architecture, arts and design. However, the exhibition, with its utopian interaction of various fields, presented something quite different to the kind of collaboration that could be found in the 1950s between architects, visual artists and designers, mainly committed to decorations for new buildings, flats, houses and cruise ships. What prevailed in the exhibition was a germinal form of installation which took precedence over the single artworks. In that sense, it is possible

[157] R. Devos, and M. De Kooning (eds), *The Architecture of Expo 58*, Dexia/Mercatorfonds, Brussels 2006; R> Schuldenfrei, *Atomic Dwelling. Anxiety, Domesticity, and Postwar Architecture*, Routledge, New York 2012.
[158] *This is Tomorrow*, op. cit.
[159] *This is Tomorrow*, op. cit.

to argue that "This Is Tomorrow" anticipated a tendency that would be clearly manifested in the late 1960s.

The associations proposed at the Whitechapel were an attempt to provide a suitable response to the art of the future in accordance with an era full of new discoveries and sophisticated machines. To bring together several art forms was probably regarded as a practical outcome for the architects and visual artists of the new era. Nevertheless, the statements produced were not univocal and came from a variety of individuals. The first idea for the exhibition came, in fact, from the British painter Paule Vézelay (1892- 1984), who was trying, in the early 1950s, to form in London a branch of the Parisian Groupe Espace, the constructivist abstract movement lead by André Bloc (1896-1966). In 1955 she organized, at the Royal Festival Hall in London, an exhibition with a small group of architects, painters and sculptors, who anticipated the aspirations to Total Art that would be characterised by "This Is Tomorrow", as well as its constructivist tendency.

The contributors to "This Is Tomorrow" formed twelve groups, each of which aimed to include an architect, a sculptor and a painter. Group One was formed by the versatile architect Theo Crosby (1925-1994), the Italian designer Germano Facetti (1926-2006), the Scottish sculptor William Turnbull and the graphic designer Edward Wright (1912-1988); Group Two by the painter Richard Hamilton, the artist and sociologist John McHale and the architect and designer John Voelcker (1927-1972); Group Three by the architect and designer J. D. H. Catleugh (1920-2009), the painter James Hull (1921-1990) and the sculptor Leslie Thornton (b. 1925); Group Four by architect Anthony Jackson (b. 1926), the sculptor Sarah Jackson (1924-2004) and the Italian artist Emilio Scanavino (1922-1986); Group Five by the American painter John Ernest (1922-1994), the Constructivist artist Anthony Hill (b. 1930) and the

painter Denis Williams (1923–1998); Group Six by the photographer Nigel Henderson, the architects Alison and Peter Smithson and the artist Eduardo Paolozzi; Group Seven by the architect and designer Ernö Goldfinger (1902–1987), the painter Victor Pasmore (1908-1998) and Helen Phillips (1913–1988); Group Eight by Richard Matthews and the architects Michael Pine (1928-2013) and James Stirling (1926–1992); Group Nine by the constructivist artists Kenneth Martin (1905–1984) and Mary Martin (1907–1969) and the architect John Weeks (1921–2005); Group Ten by the sculptor and designer Robert Adams (1917–1984), the architect Peter Carter (b. 1927), the structural engineer Frank Newby (1926–2001) and the sculptor John Wilson (1922–2007); Group Eleven by the painter Adrian Heath (1920–1992) and, again, by John Weeks; Group Twelve by the critic Lawrence Alloway, the artist and writer Toni del Renzio and the architect Geoffrey Holroyd.

As evident from the list, the exhibition involved former members of the Independent Group along with constructivist artists and various others. Most of them were born in the 1920s and were considered the new generation of British creativity. The coexistence of all these different people produced exhibits that captured the attention of the public, the press and the following generation of critics and historians. It has been noted, on several occasions, that popular culture characterised both the installations made by Hamilton, McHale and Voelcker for Group Two and by Alloway, Holroyd and del Renzio for Group Twelve (Fig. 44). The overall Brutalist style of "Patio & Pavilion" designed by Paolozzi, Henderson and the Smithsons has been observed (Fig. 46 and 47), as has the constructivist tendency of various exhibits, including the one proposed by Ernest, Hill and Williams for Group Five, with the homage to Kazimir Malevich (1879-1935) and Naum Gabo (1890-

1977).[160] Some of these people had interesting stories and connections, relevant to this thesis's argument. The British architect John Voelcker, for instance, worked in Milan between the end of the 1940s and the beginning of the 1950s. He was a founder member of Team 10, a group of architects formed at, and in opposition to the 1953 Congrès Internationaux d'Architecture Moderne (CIAM), which expressed mainstream ideas in the field of architecture.[161] In 1958 he designed a building for jazz musician Humphrey Lyttelton (1921-2008) which included a mural by McHale. At the same time, all these heterogeneous groups prevent our looking at the exhibition as a unified entity, as with the previous "Growth and Form", "Parallel of Life and Art" and "Man, Machine and Motion". Nevertheless, there are some crucial aspects of "This is Tomorrow" that are quite key for this thesis, mainly manifested by former members of the Independent Group involved in the exhibition.

In the forecast for the future, "This is Tomorrow" presented the decade's on-going interest in science and science fiction. "Bubble", for instance, made by Matthews, Pine and Stirling, in Group Eight, was a giant sculpture reproduction of a detergent bubble, which recalled various kinds of cell structures. The main compendium of popular references was probably provided by Hamilton, McHale and Voelcker, in Group Two, with the inclusion in their space of a juke box and a real version of the hero of the future: Robbie the Robot, star of "Forbidden Planet" (1956), the successful film directed by Fred M. Wilcox (1907-1964). It is interesting to note that at the New York Fair in 1939, another robot became a huge attraction: Electro the

[160] A. Massey, "This is Tomorrow and beyond", in *The Independent Group: Modernism and Mass Culture in Britain, 1945-59*, cit., pp. 95-108; G. Whitham, "Exhibitions. This is Tomorrow", in D. Robbins, op. cit., pp. 135-159; A. Massey, "This is Tomorrow", in C. Lichtenstein, and T. Schregenberger, op. cit., pp. 176-193.

[161] B. Highmore, "Rescuing optimism from oblivion", in D. Van der Heuvel and M. Risselada (eds.), *Team 10: In Search of a Utopia of the Present 1953-81*, NAi Publishers, Rotterdam 2005, pp. 271-275.

Moto-Man, a two-metre-tall talking robot, featured by Westinghouse (Fig. 40). Again, in the desire for modernity, popular culture played a major role. One of its manifestations was directly through Hollywood science fiction movies. As appeared in the wording of the trailer for "Forbidden Planet", there was great hope for future:

Today, man prepares to take his first step outward into space – tomorrow he will explore the stars. MGM's great technical staff brings you a magnificent picture of that distant tomorrow.

As the first science fiction movie with spacecraft designed for travelling between stars, "Forbidden Planet" let the generation of the 1950s dream about the unknown possibility of the future (see the poster Fig. 44). The film itself appeared as a masterpiece of technology, made using the latest techniques of the time, not only for the pictures but also for the sound. Its soundtrack was, in fact, an experimental project made by Louis Barron (1920–1989), who followed the suggestions of the book "Cybernetics: or the Control and Communication in the Animal and the Machine", written by the mathematician and electrical engineer Norbert Wiener (1894–1964). Barron used electronic circuits for recording the basic sounds and then added further effects.[162]

Enthusiasm, pleasure, unknown and exciting possibilities, surprise, imagination, accomplished desires, updated technologies, synonymous with modernity in the 1950s, the notion of 'Future' encompassed various concepts and feelings. "This is Tomorrow" was not the only manifestation of optimism for the future. Also in 1956 the "Daily Mail Ideal Home Exhibition" was held at Olympia, Kensington, sponsored by *The Daily Mail* newspaper. For the event, Alison and Peter Smithson

[162] P. Lev, *The Fifties. Transforming the Screen, 1950–1959*, Charles Scribner's Sons, New York 2003.

designed the "House of the Future", an explicit forecast of the interior that would characterise homes in the 1980s. The house was exhibited in the section "The Village of Today and Tomorrow" and was contained in a huge white box. The interior was a continuous space made of plastic, with sliding walls and furniture designed by the Smithsons. The house was conceived as a high-tech machine with an electrostatic dust collector, a fridge, a washing machine, a loud-speaking telephone and a remote control button for lowering the table to floor level (Fig. 48). The house was isolated from the outdoors and in the middle of its space it had a garden patio, which was the only source of nature available. During the opening, the inhabitants wore clothes designed by Teddy Tinling (1910–1990) – cardigans and leggings for men and mini dresses for women (Fig. 49 and 50). As a whole, architects and designers were involved in forecasting how progress would affect daily life.

In 1957 a real "House of the Future", quite similar to the one made by the Smithsons and built in the United States, gained the attention of the global media and the public. It was an attraction at Disneyland in Anaheim, California, built in area called "Tomorrowland". The project was sponsored by Monsanto, an American multinational agricultural biotechnology corporation that was also responsible for the projects, along with Walt Disney Imagineering (WDI), the design and development branch of the Walt Disney Company (Fig. 52). In the first six weeks after the opening, the house had 435,000 visitors and achieved a total of 20 million visits by the public before being closed in 1967. The house was held up by a huge concrete pillar and had four equal wings, floating on the landscape. It was made of plastic and its "Atoms for Living Kitchen" had a revolutionary microwave oven, which became one of its main attractions. In 1956 the musical film "Design for

Dreaming", had also several sequences in an automatic kitchen, a prototype produced by Frigidaire with several new types of equipment, including an ultrasonic dishwasher, drier and sterilizer, activated by an IBM electro-recipe file, and able to do any kind of task and cook any kind of dish.[163]

Regarding the overall setting of the project made by the Smithsons for the Daily Mail Exhibition, it is possible to consider various sources of inspiration. As remarked on by Beatriz Colomina,[164] the house itself appeared to be as an atomic shelter or as the interior of a space shuttle, with its aseptic white walls and its disconnection from the outside - the house had, in fact, no windows. The Dymaxion House,[165] designed as a prototype by Buckminster Fuller (Fig. 51) and conceived in 1927, could be considered as a further reference for the project made by the Smithsons. As pointed out by Beatriz Colomina, the project made by the American architect had several aspects in common with the "House of the Future": both were disconnected from the external world and both were a self-contained architecture.[166] The shape designed by Fuller was hexagonal, sustained by a central pole; the material used was aluminium, chosen for its lightness and great strength, suitable for any weather conditions and for any location. Both houses - the one made by the Smithsons and the one made by Fuller - seemed to be conceived to survive bombs or an apocalyptic disaster. At the same time, Fuller was probably more concerned about the achievement of a utopian and

[163] The film was shot at the General Motors Motorama (1956) and showed several models of Buick, Cadillac, Chevrolet and Oldsmobile.
[164] B. Colomina, "Unbreathed Air 1956", in D. van den Heuvel and M. Risselada (eds), op. cit., pp. 31-49.
[165] 'Dymaxion' was the term used by Fuller for several of his inventions (beyond the Dymaxion House, his projects included the Dymaxion car and the Dymaxion World Map). It came from a combination of the words dynamic, maximum and tension. See: L. S. Sieden, *Buckminster Fuller's Universe*, Perseus Pub, Cambridge, Mass. 2000.
[166] B. Colomina, "Unbreathed Air, 1956," op. cit., p. 45.

sustainable architectural model, while the Smithsons, with their radical design, were showing two aspects of the age. The fact that the "House of the Future" recalled an atomic shelter can be seen, indeed, in the context of the 'Atomic age', so called by William L. Laurence (1888–1977), official journalist of the Manhattan Project for the *New York Times*. The project developed the first nuclear weapons during War World II, and was led by the United States and supported by Canada and Britain. The nuclear resolution of World War II, the first atomic bomb tested in 1949 by the Soviet Union and the development of the hydrogen bomb, made by United States, raised several fears in society and put the generation of the 1950s in an ambivalent and almost "schizophrenic" position towards science and technology.[167] On the one hand, discoveries were seen as an opportunity to further progress for modern society, on the other, memories of Hiroshima and Nagasaki being destroyed by bombs, and the precarious political and economical balance of the aftermath, generated fear and insecurity.[168] These opposing attitudes were both expressed by the presence of the utopian Robbie the Robot at "This is Tomorrow" and the dystopian vision of tomorrow of "The House of the Future". In the end, the fear of a new conflict would justify the 'aesthetic' of the shelter conceived by the Smithsons. In the late 1950s the 'Atomic age' gave way to the 'Space Age'. On the 4th October 1957 the Soviet Union launched, from Kazakhstan, the Soviet satellite Sputnik. The mission was followed by the United States with the launch of Explorer 1 from Cape Canaveral Air Force Station on the 31st January

[167] P. Boyer, "The United States, 1941-1963. A Historical Overview", p. 39, in B. Rapaport and K. Stayton, *Vital Forms: American Art and Design in the Atomic Age, 1940-1960*, exh. cat., Brooklyn Museum, New York 2001.

[168] Nuclear sources were alternatively associated with atomic bombs or with cheaper energy, progress in medicine and diagnosis. In the 1950s the United States started a big propaganda campaign on the value of atomic energy until 1957, when the first commercial-scale nuclear power plant was commissioned in Pennsylvania and the possibility of affordable electricity became reality for millions of American citizens.

1958. In America the National Advisory Committee for Aeronautics (NACA) started its experiments with rockets in 1946.[169] This context can justify the inspiration for the space shuttle design of the "House of the Future".

The alternate feelings of fear and hope which characterised the 1950s would be transformed into a different concern a decade later. When, in 1969, John McHale wrote his book "The Future of the Future", quoted at the beginning of this chapter, he was not really animated by enthusiasm towards progress.[170] On the contrary, his concern was more about sustainability and the resources of the planet. These topics progressively received attention in the United Sates after the publication of "Silent Spring", written in 1962 by the marine biologist and conservationist Rachel Louise Carson (1907-1964),[171] which presented the negative effect humans have on nature by using chemical products and pesticides. When the global environmental movement advanced in the 1960s, McHale was living in America, was a Research Associate with Buckminster Fuller in the World Resources Inventory and was certainly aware of the book written by Carson. He also wrote several reports with Fuller on world resources and human tendencies and needs.[172] Furthermore, the impact of the American architect himself on the British artist was crucial. From the middle of the 1950s McHale followed the activities of Fuller, his foremost concern for the environment and for sustainable city planning, as shown in an extensive article written for

[169] In order to continue the work started by NACA, the American President Dwight David Eisenhower (1890-1969) established in 1958 the NASA (National Aeronautics and Space Act). The five-star General Eishenhower became the 34th President of the United States in 1953 and he remained in service until 1961.

[170] J. McHale, *The Future of the Future*, op. cit.

[171] R.L. Carson, *Silent Spring*, Houghton Mifflin, Boston 1962.

[172] B. Fuller and J. McHale, op. cit.

Architectural Review.[173] Nevertheless, "Future of the Future" focussed more on the necessity of finding the right balance between progress and population growth. In his essay, McHale acknowledged the advancement made by humankind in technology and science, with a chapter devoted to the industrial revolution and several pictures of robots, spacesuit equipment and satellites, which might call to mind some sections of "Man, Machine and Motion". However, since the time of McHale's involvement in the Independent Group, conditions had totally changed. The enthusiasm for progress and the admiration for the endless possibilities of humanity as manifested by McHale, Hamilton and Voelcker with Group 2 at "This Is Tomorrow" was probably gone along with the 1950s, a decade full of hope and expectation.

[173] J. McHale, "Buckminster Fuller", op. cit., pp. 13-20; J. McHale, *Buckminster Fuller: Makes of Contemporary Architecture*, op. cit.

Part II

Industrial Design and Modernity

The previous part of the thesis argued that the generation of the 1950s looked at the themes of 'science', 'machine' and 'future', generally, with optimism. This part argues that industrial design products were perceived as emblematic of modernity and, in a symbolic way, encompassed the three themes addressed in the previous part. They were the result of scientific developments, machines themselves, created to make life easier, proof that a new tomorrow was already there. As explained in the third chapter of the previous part, streamlined appliances made their first appearance in the USA in the 1930s and featured in 1939 at the New York World's Fair, then, in Europe, entered progressively into the homes of the post war generations and introduced new habits to a rising middle-class society. The diffusion of typewriters and calculating machines changed the way of working, while for many people new models of cars and motorbikes became iconic objects of desire.

The proliferation of industrial design products meant that they became part of daily life; they were included by artists in their art works, were created by people from various backgrounds and were objects of theoretical speculation by critics. In this regard, reference can be made to the works of Richard Hamilton, with car parts, vacuum cleaners and toasters, already discussed in the first part; to the objects designed by Ettore Sottsass that will be presented in the first chapter of this section and to the articles and essays written by Reyner Banham and Gillo Dorfles, that will be analyzed in the last section of this thesis.

As an interdisciplinary examination of some peculiar aspects of the 1950s, rather than a traditional investigation into industrial design history, this section will clarify how a group of artists, architects, critics, designers and photographers, mainly in Italy and Britain, reacted in relationship to the development of a relatively new field. Examples of this attitude are the activity of Hammer Prints Ltd., created in 1954 by the photographer Nigel Henderson and by the artist Eduardo Paolozzi, and the experimental International Movement for an Imaginist Bauhaus set up in Alba, near Turin, in 1955, founded by Asger Jorn, Giuseppe Pinot-Gallizio and Piero Simondo. The former was a small-scale company somewhere between handicraft workshop and industrial design firm. The latter was a short-lived avant-garde phenomenon, which positioned itself critically towards the Triennale in Milan and the Hochschule für Gestaltung (HfG) in Ulm,[174] which were both arguing in favour of the importance of industrial design as a new, creative artistic field. On the other hand, the International Movement for an Imaginist Bauhaus, according to Jorn, "answered the question of where and how to find a justified place for the artist in the machine age"[175] through the creation of an experimental workshop.

This part will also present the attempts and actions made across Europe by associations, national organizations, magazines, panels of professionals and various other institutions to professionalise the new category. It will present definitions and expressions used to define mass production and the standards established in France, for instance, in order to define what should be considered industrial design and what

[174] M. Bandini, *L'estetico e il politico. Da Cobra all'Internazionale Situazionista 1948-1957*, Officina, Roma 1977.
[175] A. Jorn, "Notes on the Formation of the Imaginist Bauhaus", in K. Knabb, *Situationist International Anthology*, Bureau of Public Secret, Berkeley 2007, p. 23 [First published as a leaflet in Italy, in 1956].

should not. It will also draw on the education systems created at Ulm and at the IIT Institute of Design, in Chicago, for upcoming designers. The latter two institutions were founded in the aftermath of the Bauhaus, and used it as a model to clarify what industrial design was and which kind of education should be provided for young generations.

Finally, this part will discuss connections between Italian and British personalities. As underlined in the thesis' introduction, geographically, the main points of view used in this study have been observed in Britain and Italy, with their peculiarities and their different stages in various fields, including industry. It is worth remembering that at the end of the war, more than a century after the industrial revolution, British manufacturing had lost its vital energy and was near to collapse. On the contrary, Italy, in the crucial years of the aftermath, thanks to the Marshall Plan and American support, started its economic miracle that would be completed only in the 1980s. Bearing in mind these background scenarios will provide a better understanding of why it was that in Italy the industrial design sector became so important as a high cultural phenomenon and why in Britain it played a lesser role, becoming part of popular culture.

1. Playing around with Industrial Design

The history of Hammer Prints Ltd., the small-scale company founded in 1954 at Landermere Wharf by Henderson and Paolozzi, has been recently traced by Michelle Cotton.[176] It is known that the firm, officially dissolved in 1975, produced mainly textiles, wallpapers and ceramics. Its wallpapers were manufactured from 1955 by Cole & Son and its textiles were produced from 1958 by Hull Traders, a Lancashire firm. The Hammer Prints had as clients the British architect Jane Drew (1911-1996), the jazz composer John Dankworth (1927-2010), the designer Terence Conran, the architects Richard Sheppard (1910-1982) and Theo Crosby (1925-1994), the Institute of Contemporary Arts itself, as well as other individuals and institutions. It is also known that the company had regular meetings, run at least until 1962, with minutes taken and kept by Judith Henderson.

Paolozzi's descriptions of the prints give insight as to the working processes of the firm: ""Sgraffito" is built up around several photo prints of an inked impression of an engraved block of plaster"; ""Hessian" (Fig. 54) is a demonstration of a monotype principal, pieces of inked canvas arranged and rearranged to form a multi-evocative pattern"; and "Coalface" "is the lid of a tea chest engraved and worked upon with red-hot wire to form a design which would evoke the world of geological stratifications".[177] However, "Cowcumber" (Fig. 53)

[176] M. Cotton, *Nigel Henderson & Eduardo Paolozzi: Hammer Prints Ltd 1954-75*, exh. cat, Firstsite Gallery, Colchester, 8 December 2012-3 March 2013. An early account of the company was provided by *Nigel Henderson*, exh. cat., Anthony d'Offay, London, 15 September - 22 October, 1977; V. Walsh, *Nigel Henderson. Parallel of Life and Art*, op. cit., pp. 137-139 and R. Spencer, *Eduardo Paolozzi: Writings and Interviews*, Oxford University Press, Oxford, 2000, pp. 77-79.

[177] An interest in stratifications, both geological and archaeological, was present also at the exhibition "Parallel of Life and Art", discussed in the previous part, along with other images collected for the exhibition by Henderson, Paolozzi and the Smithsons.

came from a "photo-enlargement of a seventeenth century herbal wood-cut with adjustments made to fit scale of screen and repeat",[178] an example of images taken from known sources being used as motifs for wallpapers, textiles and ceramics were screen printed with images taken from known sources.[179] The series "Toys" (Fig. 57 and 58) and "Portobello", for instance, were inspired mainly by images taken from two books - Carl William Drepperd (1898-1956), "Pioneer America: Its First Three Centuries" (1949) and Clarence Pearson Hornung (1899-1997), "Handbook of Early American Advertising Art" (1947). Another source of graphics was the "Encyclopédie, ou Dictionnaire raisonnè des sciences, des arts et des métiers", by Denis Diderot (1713-1784), and Jean le Rond d'Alembert (1717-1783), published in 1759. From this last extensive text, which reproduced several engravings, Henderson and Paolozzi took the repertoire of sea beasts and marine species known also thanks to D'Arcy Wentworth Thompson's book, which inspired the exhibition "Growth and Form". The images were screen printed on ceramics, textiles and wallpapers and again, as noted, came from Henderson and Paolozzi's knowledge of photography and silkscreen. Paolozzi was quite familiar with textiles, thanks to his teaching commitment at the Central School of Art, in London, where he taught textile design from 1950 to 1954. It is likely that during his teaching, he also learned how to make pottery.

What is intriguing for this thesis is the fact that Hammer Prints, instead of producing hand-made tiles, bowls and other kind of objects, used ready-made products and focused on the selection of illustrations and on the printing process. For Henderson and Paolozzi there was no difference between

[178] Eduardo Paolozzi to Peter Hatch (Director of the Council of Industrial Design), 22 August 1955, Tate Archive, reprinted in R. Spencer, *Eduardo Paolozzi: Writings and Interviews*, op. cit., pp. 77-78.
[179] M. Cotton, op. cit.

textiles, ceramics and wallpapers, they were considered just as materials to decorate with screen prints. This put Hammer Prints in a very peculiar position: it was neither truly a handicraft workshop nor a mass production firm; it was an experimental small company with the aim of generating a little income for the Henderson and Paolozzi families.[180] This aspect is not insignificant. On the contrary, it helps to explain why the small firm produced some of its patterns. The descriptive illustrations transferred onto ceramics, textiles and wallpapers and taken from commercial advertisements dating from the eighteenth and nineteenth centuries, and collected by Hornung and Drepperd in their books, had, in fact, nothing to do with Henderson and Paolozzi's artistic vision. At the time, their interest was for the 'as found' aesthetic, for the Brutalist style and for various kinds of popular culture sources presented in the exhibition "Parallel of Life and Art" and in the installation of Group 6's "This Is Tomorrow".[181] In addition to their teaching commitments, they were carrying on they own work: Henderson with his experimental pictures and Paolozzi with his sculptures and collages. It is useful to remember that the Scottish artist had spent a few years collecting contemporary advertisements, mainly taken from American magazines and used in the series "Bunk", made between 1947 and 1952, in which there are no traces of nineteenth century illustrations.[182] Given the basis of their oeuvres and careers, the motifs used by Hammer Prints and taken from images created during the previous century, seem to present a clash.

What may explain their unusual interest in old-fashioned graphic design could be the inspiration of contemporary works made by the Italian artist and designer Piero Fornasetti, who

[180] This practical reason is also underlined by M. Cotton, op. cit., p. 21.
[181] C. Lichtenstein and T. Schregenberger, op. cit.
[182] J. P. Stonard, "The 'Bunk' collages of Eduardo Paolozzi", in *The Burlington Magazine*, April 2008, pp. 238-249.

began to collaborate with Gio Ponti in interior design in 1940s. Wardrobes, trumeaux, dressers, tables, chairs, wallpapers, textiles, screens, umbrella stands, lamp bases, tiles, plates and a prolific range of ceramic objects were all designed and decorated by Fornasetti. The sort of images created by Fornasetti combined Metaphysical and Surrealist tendencies - the legacy of Alberto Savinio (1891-1952), Giorgio De Chirico (1888-1978) and others - and the old Italian tradition. He created a kind of Renaissance workshop where the artist was able to do everything from fresco painting to furniture. His innovative works consisted of printing images on furniture and on various kinds of objects, usually designed by him. Sometimes he altered the prints by applying further decoration (as hand-carved linocuts) or by reinforcing colours. He worked in a close relationship with Ponti and, along with other Italian artists, designed interiors and objects for public buildings, continental ships and private apartments.[183] Like Henderson and Paolozzi, he was, in some cases, more interested in the decoration than in the objects themselves, and like Hammer Prints he was in a quite unique position, that is, between art and craft, and industrial design.

In a very well known series, the Italian artist reproduced a woman's face that, according to some critics, is a portrait of the lyric singer Lina Cavalieri (1875-1944), which appeared in Fig. 60, found in a nineteenth-century French magazine. Over the years, Fornasetti made more than 300 variations of this face, mainly on plates, as homage to an enigmatic and classical female beauty. In conjunction with this subject, the artist used several other images on playing cards and in illustrations, again taken from magazines printed in the nineteenth century or at

[183] B. Fornasetti (ed.), *Fornasetti. The Complete Universe*, Rizzoli, New York 2010; P. Mauriès, *Fornasetti Designer of Dreams*, Thames and Hudson, London 1991.

the beginning of the twentieth century, which he then manipulated. Considering Fornasetti's overall career, this choice is coherent with his path, while, on the contrary and as already underlined, it is quite surprising to see a similar choice in Paolozzi and Henderson.
A link between Fornasetti, Paolozzi and Henderson has already been noted by Cotton, who also mentioned the admiration for the Italian designer, expressed by Paolozzi and quoted in a book about textile designs, written by Terence Conran.[184] This chapter will develop this link by dividing the range of motifs produced by the Hammer Prints into two groups and identifying precise connections with Fornasetti.

In the works created by the British company, it is possible to assert that the figurative images were probably made by following in Fornasetti's footsteps, while the series under the names "Newspaper", "Sgraffito",[185] "Coalface" and "Barkcloth" (Fig. 55) were more authentic and were the expression of the artworks concurrently made by Henderson and Paolozzi. In the second range of patterns, the two artists applied the concept of 'as found' by manipulating and overlapping images and objects, as they normally did, respectively as photographer and as painter and sculptor.

In relation to the series named "Cowcumber", "Portobello", "Toys" and "Sea Beasts", made by Hammer Prints, it is possible to trace several direct connections with motifs created by Fornasetti, as appeared by comparing Fig. 56 and 61 or Fig. 57 and 59. Since 1939 the Italian had used clocks, guns, various toys, sea beasts and watermelons for wallpapers, cigarette

[184] M. Cotton, op. cit., p. 33; Terence Conran, "Printed Textile Design", Studio Publications, London; New York 1957.
[185] The word 'Sgraffito' came from the Italian word 'graffito', which means 'scratch', and referred to scratching into layers of plaster or clay and then using the result as a drawing.

cases, ashtrays, umbrella stands, try tables, plates and several other objects. The style is quite close to the one employed by Hammer Prints in its motifs, from the mid 1950s; this is not surprising because both were looking at similar sources: illustrations from the previous century.

Another association could be found in the handbreadth, designed by Hammer Prints for tiles used in a mosaic made for a concrete block and probably done between 1954 and 1961.[186] A similar image had been made by Fornasetti since 1940, when Ponti asked him to create a calendar as a limited edition to give as a gift to his circle of friends and colleagues. "All'insegna delle dodici mani. Lunario per l'anno 1940" ("At the Sign of the Twelve Hands. Year's Almanac 1940")[187] has a graphic reproduction of the handbreadth decorated in different ways for each of the twelve months. The handbreadth became a recurring motif in Fornasetti's creations and was used for several objects.

A final association can be made between Fornasetti's newsprints, mainly taken from the popular national and international press and used since the 1940s for the decoration of foulards, ceramics and other objects. In 1955 Hammer Prints also produced wallpapers with reproductions of newspapers, but in that case the primary sources were probably the pictures made by Henderson in the late 1940s with the overlapping of damaged posters and their words, found on Parisian walls.[188] This last series is part of those identified as the authentic expression of their overall activities.

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[186] Reproduced in: V. Walsh, *Nigel Henderson. Parallel of Life and Art*, op. cit., p. 139; M. Cotton, op. cit., p. 73.

[187] The Almanac was printed in editions of 500 copies by the Arti Grafiche Protti, Milanoo, 1940. Over the years, Fornasetti made several Almanacchi in limited editions and with different graphic decorations, again at the request of Ponti.

[188] See M. Cotton, op. cit., p. 58–59.

In considering the aim of making a profit that, at least in part, motivated Hammer Prints Ltd., it could be surmised that using images similar to Fornasetti's, was seen by Henderson and Paolozzi as a way of increasing sales. At the time, they were probably aware of his success. He had been exhibiting at the Triennale in Milan since 1936 and was periodically reviewed by the authoritative Italian design magazine *Domus*.[189] Even now – the firm still being in business and run by Fornasetti's son Barnaba – his motifs appear to appeal to British taste and his products are sold in the UK. In addition, the company has an on-going partnership with Cole & Son, the same British firm that used to produce wallpapers from Hammer Prints' range of patterns. Of course, even the more abstract decorations made by Henderson and Paolozzi were not unrelated to commerce. On the contrary, they were an alternative to the modern images used, quite often inspired by science, and really popular during 1950s, as underlined in the previous part of this thesis. If the concept of interior became clear in Britain in the 1960s,[190] the attempt to create a modern domestic environment had already been made in the previous decade. The differing results achieved by the British and the Italian companies were probably due to the contexts in which they operated. Fornasetti was, in fact, supported by Gio Ponti, who championed the need for new modern interiors, among educated Milanese high society, through *Domus*, the magazine that was considered by public and critics as the authority on style. In Britain, an institution like the Council of Industrial Design, and its magazine *Design*, realized the need to raise an upper middle

[189] All in *Domus*: "Fornasetti in Inghilterra", No. 349, December 1958, pp. 49–52; "Lavoro e divertimento di Fornasetti", No. 313, December 1955, p. 51–54; "Diciotto Fornasetti", No. 321, August 1956, pp. 37–39; "Otto Fornasetti", No. 361, December 1959, pp. 66–67.

[190] P. Sparke, "At Home with Modernity: The New Domestic Scene", in *British Design from 1948: Innovation in the Modern Age*, exh. cat., Victoria and Albert Museum, London 31 March–12 August 2012, pp. 120–137.

class and promote local firms, but they were not promoting any single individual and were mainly following new products or techniques.[191] Furthermore, most likely Henderson and Paolozzi were not willing to devote themselves exclusively to Hammer Prints. In the end, they were distracted by their own careers as teachers and as artists and they probably never saw the firm's huge potential. Of the two, it was Henderson who took more seriously the activity of the firm and tried to keep it going until 1975, while it was Paolozzi who saw pretty early on the possibilities that could be gained in design and craft products. Before the company was established in 1950 the Scottish artist, along with Neil Morris, assisted the architect Jane Drew in the refurbishment of spaces at the ICA in Dover Street and, with Terence Conran, designed a coffee table made from concrete and metal.[192] Furthermore, in 1951 Paolozzi made a screen-printed wallpaper for the home of the writer Kathleen Raine (1908–2003) at 9 Paultons Square, in London. Then, in 1953, he took part in the ICA's show "Paintings into Textiles",[193] sponsored by the export magazine *The Ambassador*,[194] that later reproduced a dress by Horrockses Fashions, based on the artist's motifs.

Beyond the desire to create new patterns, in Europe the reproduction of design images for clothes and textiles was not unusual. As mentioned in the previous section, in 1951, in Stockholm, at the International Union of Crystallography

[191] It is the 'Fotexur' process which enabled designers to achieve a similar result to the so called 'as found' series made by Hammer Prints Ltd. by using details taken from pictures the details being repeated and re-organized. See: M. Farr, "Fotexur", in *Design*, No.100, April 1957, pp. 44–53.

[192] A. Massey, *The Independent Group. Modernism and Mass Culture in Britain, 1945–59*, op. cit., pp. 39–42.

[193] *Paintings into Textiles*, exh. cat., Institute of Contemporary Arts, London, 22 October–14 November 1953.

[194] The magazine was founded in 1933 with the title *International Textiles*, changed to *The Ambassador* in 1946. At the time it had offices in 45 countries and it run its activities until 1972. C. Breward and C. Wilcox (eds), *The Ambassador Magazine: Promoting Post-War British Textiles and Fashion*, Victoria and Albert Publishing, London 2012.

conference, Max Perutz's wife wore a dress made from a textile with the reproduction of horse methaemoglobin. The attempt to make more appealing textiles and fashionable dresses was made in UK by the Czech artist and designer Zika Ascher (1910–1992) with the launch of "The Ascher Project", that aimed to create innovative textiles based on the works of contemporary artists. Between 1946 and 1955 Cecil Beaton (1904–1980), Alexander Calder (1898-1976), Antoni Clave (1913-2005), Sonia Delaunay (1885–1979), Andrè Derain (1880–1954), Barbara Hepworth, Henri Matisse (1869–1954), Henry Moore (1898–1986), Paul Nash (1889–1946), Ben Nicholson (1894–1982), Francis Picabia and many others were involved with Ascher in the production of new patterns for fabrics.[195] "The Ascher Project" was not an exception in Europe. In France, the success achieved with textiles by the Ukrainian/French artist Sonia Delaunay (1885–1979), whose eponymous Maison, created during the first phase of Modernism, was upheld in the 1950s (drawings of her creations are reproduced with Fig. 62). Well known among sophisticated clients, it continued to flourish through a partnership with Joseph de Leeuw (1872–1944), owner of the emporium Metz & Co, based in Amsterdam, for which she produced more than 2,000 fabrics. Delaunay's textiles, were usually screen-printed, hand-sewn and embroidered.[196] In the Netherlands, a famous department store in Amsterdam, De Bijenkorf, was responsible for the involvement of Karel Appel (1921–2006) in the design of several textiles. Furthermore, thanks to Martin Visser (1922–2009) who at the time was the chief furniture buyer, several contemporary art exhibitions were held in the furniture department, mainly with the

[195] V.D. Menders and F. Hinchcliffe, *Ascher: Fabric, Art, Fashion*, exh. cat., Victoria and Albert Museum, London 1987.

[196] *Color Moves: Art and Fashion by Sonia Delaunay*, exh. cat., Cooper-Hewitt, National Design Museum, New York, 18 March - 19 June 2011; *Sonia Delaunay*, exh. cat., Tate Modern, London, 15 April - 9 August 2015.

inclusion of the Cobra group, to which belonged Asger Jorn, leader of the International Movement for an Imaginist Bauhaus, which will be analysed below.

Following this general overview of Hammer Prints's activities, with further clarification of their sources of inspiration and a glance at textile design in the UK and in other parts of Europe, it is probably worth defining what exactly Henderson and Paolozzi were dealing with.

The company proposed an approach that was very different from the handicraft tradition, but its low-scale production cannot be considered industrial. At the same time, by using a mechanical process to screen printing on ready-made ceramics and textiles, they were revolutionising the decoration method. The mechanical effect of the screen prints would be used in the upcoming years by Paolozzi in the series "As Is When", made in the 1960s and inspired by the life of Austrian-British philosopher Ludwig Wittgenstein (1889–1951).[197] Between the 1950s and the 1960s the same technique would be applied in various ways by visual artists, as in the experimental works by the American artist Robert Rauschenberg (1925–2008) and in the infamous canvases by Andy Warhol (1928–1987). It is probably useful to remember that the accusation against Warhol by contemporary critics was exactly the fact that he was using a mechanical process for the reproduction of images instead of painting his canvas. What Walter Benjamin had predicted in "The Work of Art in the Age of Mechanical

[197] The series is in the University of Warwick Art Collection and included the following individual works: "Artificial Sun", "Tortured Life", "Experience", "Reality", "Wittgenstein the Soldier", "Wittgenstein in New York", "Parrot", "Futurism at Lenabo", "Assembling Reminders for a "Particular Purpose", "The Spirit of the Snake", "He Must, So To Speak, Throw Away the Ladder" and "Wittgenstein at the Cinema Admires Betty Grable". In the screenprints, Paolozzi combines with collaged images texts taken from the philosopher's writings, found in "Notebook" and "Philosophical Investigations".

Reproduction", written in 1936,[198] actually happened and industrial design objects, made by industries, were there to influence, maybe indirectly, how to make art in a modern society.

A different approach to that of Hammer Prints was to revive the handcrafted ceramics made since the end of the war. At that time, Pablo Picasso played a crucial part in the renaissance of the Vallauris pottery industry. He moved to the French Riviera, from 1948 until 1955, and developed his fascination for ceramics and linocuts. It is estimated that during his life, the artist made almost 2,900 ceramics, a high number considering how much he was taken by other activities. In a picture taken by Lee Miller, Picasso is seen at work, under the observation of Gary Cooper and his daughter Maria Janis (Fig. 64).

After the war, following in Picasso's footsteps, the Italian artist Tullio Mazzotti (1899-1971), involved in Futurism in the previous decades and already active as a ceramist,[199] gathered several artists in Albisola, on the Ligurian Riviera. Between them there was Lucio Fontana, who had an enduring interest in ceramics, Enrico Prampolini (1894-1956), Aligi Sassu (1912-2000), Ernesto Treccani (1920-2009), Enrico Baj (1924-2003), Sergio Dangelo (b. 1932), Asger Jorn, Karel Appel, Guillaume Cornelis van Beverloo (1922-2010), Sebastian Matta (1911-2002) and others. As well as ceramics, in the workshop Mazzotti made sculptures, paintings and limited editions of artistic books in cooperation with Marinetti, the father of

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198 W. Benjamin "Das Kunstwerk im Zeitalter seiner technischen Reproduzierbarkeit" (1936), 1955 [English translation: *"The Work of Art in the Age of Mechanical Reproduction", in Illuminations*, ed. by Hannah Arendt, trans. by Harry Zohn, Schocken Books, New York 1969].

199 Along with Marinetti, Mazzotti wrote the Manifesto "La ceramica futurista", published in *La Gazzetta del Popolo*, Torino, 7 September 1938. Mazzotti was named by the Futurist poet F. T. Marinetti, "Tullio d'Albisola". "Casa Mazzotti", his house/atelier, was designed by the futurist architect Nicolaj Diulgheroff (1901-1982) and completed in 1934. The atelier was already well known in the years between the two wars.

Futurism, and with the versatile Munari. The aim of Mazzotti's workshop was to establish, in Albisola, a new Vallauris and give new life to handicraft pottery. Most of the artists gathered in the Italian Riviera wanted to lead in an ancient tradition and add an artistic value to the objects designed. Some of them were probably motivated by a practical reason: products less expensive than paintings and sculptures would probably be within reach of more customers during the austerity of the aftermath of the war. Finally, handcrafted ceramics produced in Albisola or by the artisans from Richard Ginori, were promoted by *Domus* and by Gio Ponti as complementary parts of interiors. In living rooms, bedrooms and in other home environments, designed by Ponti himself, glass and pottery were always included as complementary parts of decoration. The furniture, quite often designed and decorated by Fornasetti, hosted his ceramics and sculptures or by those made by Guido Gambone (1909-1969), Lucio Fontana, Fausto Melotti (1901-1989), Aligi Sassu (1912-2000) or those produced by Richard Ginori. Nevertheless, in Italy ceramics were part of an ancient tradition and were seen as essential to architecture's elements and supported by the government since the early 1940s, through the 2% law.[200]

During the new Italian ceramic spring, another artistic experience came about. In 1954, the Danish artist Asger Jorn went to Albisola, where he was affected by the spontaneous possibilities offered by Mazzotti's workshop and started several long-lasting relationships with Italian artists. In the same years, between Albisola and Alba, in a village close to Turin, Jorn founded the International Movement for an Imaginist Bauhaus, along with Pinot-Gallizio, who had a scientific background with degrees in chemistry and pharmacy,

[200] According to the law, proclaimed on 11 May 1942, 2% of the total amount of the new buildings expenses should be paid for their decoration.

and Piero Simondo, painter and ceramicist.[201] As highlighted above, the International Movement for an Imaginist Bauhaus was born from critical opposition to the Hochschule für Gestaltung (HfG), created in Ulm in 1953 by Max Bill under the legacy of the Bauhaus.[202] In the aftermath of the Second World War, the school was seen by scholars, critics, visual artists, architects and designers as a model, as a place where professionals shared knowledge with students, and as a place a synthesis of the arts was put into practice. It was also at the Bauhaus that the relationship between art and society was positioned, through the creation of everyday objects with artistic values, as for everyone. The education system promoted by Bill at Ulm was based on a technical approach for perspective industrial designers, with the endorsement of mass-scale production. Jorn, on the other hand, wanted to emphasize the artist's freedom through the handicraft tradition and through the participation of ordinary people in several artistic practices.[203] The contrast between their divergent

[201] A. Zevi, "I Nucleari e Pinot Gallizio", in *Peripezie del dopoguerra nell'arte italiana*, Einaudi, Torino 2006, pp. 131-153; M. Bandini, op. cit.

[202] Bill was a former student at Dessau and he founded the new institution along with Inge Aicher-Scholl (1917-1998) and her husband Otl Aicher (1922-1991). Inge Scholl was one of the core members of the White Rose, a students' resistance movement against Nazi Germany at the University of Munich. Her brother and sister, Hans (1918-1943) and Sophie Scholl (1921-1943) were captured and accused of crimes against the nation and executed by guillotine in 1943. Otl Aicher was also strongly opposed to the Nazi movement and was arrested because he refused to join the Hitler Youth. At the end of the war he studied sculpture at the Academy of Fine Arts in Munich, and in 1947 he opened a studio in Ulm. It is interesting to note that the founding of the so called 'New Bauhaus' involved two persons actively committed to anti-Nazi activities and that the Weimar's school was closed in 1933 due to the pressure of the Nazi regime. See: R. Spitz, *HfG Ulm. Concise History of the Ulm School of Design*, op. cit.

[203] In the summer of 1955, in the courtyard of Pinot Gallizio's house in Alba, Jorn organized a workshop for a group of children, who decorated ceramics and sculptures with the aim of achieving the spontaneity advocated by Kandinsky and Klee during their activity at the Bauhaus. In July 1956 the first and last number of *Eristica*, the official magazine of the group, was issued. The name chosen derives from the Greek word "erìzein", which referred to the art of fighting with words. On September the 2nd 1956, in the Council Chamber in Alba, took place the first International Movement for an Imaginist Bauhaus congress, with the attendance of Jorn, Baj, Gallizio, Constant, Sottsass, Simondo, Varrone, Walter Olmo, the Belgian musician Calonne and others. There are no papers or recordings of the conferences. S.

position was manifested during the X Triennale in Milan, at the International Congress on Industrial Design, which took place between 28 and 30 October of 1954. As a frequent attendee at the Triennale, Bill was fully involved in the events and with his paper, "Industrial Design in Society" ("Industrial design nella società"), he presented once again[204] his vision for the role of artists in a contemporary age. According to Bill, because artists were responsible for human culture, they had the function of designing objects for mass production. These productions had to accomplish expectations and needs of humanity, in order to express a right relationship between design and society. In one of the passages of his speech, Bill clearly states that:

A large number of our contemporaries really believe in the mission of the artist as a hermit, as a living anachronism, producing a quantity of square metres covered with colours and patterns that have no meaning other than to serve the expression of an individual, an expression of himself. [...] The function of the artist is not to express himself, but to create harmonious objects at the man's service.[205]

Jorn, a "living anachronism", who found in Alba his hermitage, responded with his paper, "Against Functionalism" ("Contro il

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Riscaldone (ed), *"Una mostra: Jorn in Italia. Gli anni del Bauhaus immaginista, 1954-1957,* exh. cat., Biblioteca Civica Arduino, Moncalieri, 7 March - 5 April 1997.

[204] Bill had already exposed his theory in July 1953 during the IX CIAM (Congrès International d'Architecture Moderne), held at Aix-en-Provence and at the Congrès international d'esthétique industrielle, congress organized at the Institut d'Esthetique Industrielle in Paris by the French designer Jacques Viénot (1893-1959). The event involved about 70 speakers from 13 countries, included Great Britain, Germany and Italy. See: "Rapport general: Congrès international d'esthétique industrielle", in *Esthétique industrielle,* Vol. 10-11, 1953. Viénot took also part at the International Congress on Industrial Design, organized at the X Triennale in Milano. His contribution as promoter of industrial design will be discussed in the next chapter.

[205] M. Bill, "Industrial Design nella società", in A. Morello, (ed.), *La memoria e il futuro. I Congresso Internazionale dell'Industrial Design, Triennale di Milanoo, 1954,* Skira, Milanoo 2001, pp. 65-72 ["Un gran numero di nostri contemporanei crede veramente alla missione dell'artista come eremita, come anacronismo vivente, producente una quantità di metri quadrati coperti di colori e di motivi che non hanno altro significato che di servire all'espressione di un individuo, a una espressione di se stesso. [...] La funzione dell'artista non è quella di esprimere se stesso, ma di creare degli oggetti armoniosi al servizio dell'uomo", p. 68, translation Claudia Marfella].

funzionalismo"),[206] in which he defended the right of "free artists" to express their point of view on the relationship between art and technology:

> The task of the new science is to call into question what we know, while the task of the art and theory of modern techniques is to call into question everything that we do. Scientific doubt is expressed by analysis, but artistic doubt is expressed by action. [...] The doctrines of Le Corbusier and of the old Bauhaus in Germany were revolutionary at their time, and they constitute one of the bases of the revolution that is presently beginning. But their doctrines were all based on classical philosophy and logic. Today we need a new ideological foundation. We need new doctrines.[207]

Within his speech, Jorn did not clarify which kind of new doctrines to adopt, but his view and his intentions were manifested through the International Movement for an Imaginist Bauhaus in Alba, with the aim of using different media and artistic expression. Then, when in 1957 the experience of the International Movement for an Imaginist Bauhaus came to an end, Jorn joined the French author and filmmaker Guy Debord (1931–1994) in the Situationists International (*L'internationale situationniste*), another utopian experience with several political implications, which aimed to promote a different way of making arts and culture.[208] In the same year, Pinot-Gallizio, who also became involved in *L'internationale situationniste*, started his industrial painting, made with rolls of canvas,[209] that literally were a production of "a quantity of square metres", deprecated by Bill at the X

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[206] A. Jorn, "Contre le Fonctionnalisme", in *Pour la Forme – ébauche d'une méthodologie des Arts*, Internationale Situationiste, Paris 1958, p. 21. Beyond Jorn, the few other artists presented at the Triennale's Congress, expressed their disagreement with Max Bill. Between them there were the Italian sculptor Agenore Fabbri (1911–1998) and Lucio Fontana. See: A. Morello, op. cit., p. 93 and pp. 96–98.

[207] A. Jorn, "Contre le Fonctionnalisme", in *Pour la Forme – ébauche d'une méthodologie des Arts*, cit., p. 21.

[208] G. Debord, *The Society of the Spectacle*, Black and Red, Detroit 1967; T. McDonough (ed.), " *Guy Debord and the Situationist International: Texts and Documents*, The MIT Press, Cambridge, Mass. 2004.

[209] M. Bernstein, "In Praise of Pinot Gallizio", in *October*, No. 79, Winter 1997, pp. 93–95; M. T. Roberto, *Pinot Gallizio. Catalogo generale delle opere (1953–1964)*, Gabriele Mazzotta, Milanoo 2001; A. Zevi, op. cit.

Triennale (Fig. 65 and 66). The rolls of painting made by Gallizio, were also worn by models as dresses, with a result that was much more radical then the textiles based on the works of contemporary artists promoted with the Ascher Project and described early in this chapter.

With the International Movement for an Imaginist Bauhaus Jorn and Gallizio manifested their reaction to modernity that, as explained, came out as a reaction to mass production and to the conceptions expressed by Bill at Ulm. Then, with the *L'internationale situationniste*, their ideas became even more radical; Jorn moved to Paris, which reproduced in a painting (Fig. 67), and abandoned his commitment with the workshops in Alba and the Imaginist Bauhaus. Interestingly, a different path was taken by Ettore Sottsass, who was initially fascinated and involved with the International Movement for an Imaginist Bauhaus. In 1958, a year after the dissolution of the group from Alba, Sottsass started his cooperation with Olivetti, which continued on for 30 years. His first main project for the company was the Elea 9003, a central control unit of the mainframe, awarded with the Compasso d'Oro in 1959. Later, as a professional industrial designer, Sottsass developed several new models of calculator machines, such as Divisumma 26 and Logos 27, both made in 1963, and writing machines, such as Tekne 3 and Praxis 48, made in 1964. He took part in "The New Domestic Landscape", a landmark exhibition of Italian industrial design, organized in New York in 1972, and he founded Memphis, cutting age design group, born in 1981.[210] Memphis marked a new balance between industry and creativity, positioned inside the system of mass consumption and not outside as wished by Jorn and by the International Movement for an Imaginist Bauhaus.

[210] B. Radice: *Memphis*, Electa, Milanoo 1984; *Ettore Sottsass*, Electa, Milanoo 1993.

According to Bill, designing mass products should be the main purpose for artists of the future. To Jorn, consumption was an aspect of contemporary society against which to oppose the artistic creativity. Both Bill and Jorn, from a divergent perspective, were considering industrial design objects as a key part in the relationship between art and a mechanical process of production. In Vallauris with Picasso or in Albisola with Mazzotti, the rebirth of ceramics emphasised the value of handicraft in an age in which mechanical process were increasing. Henderson and Paolozzi, with the Hammer Prints, were experimenting with something between industry and craft. Sottsass embraced the career of industrial designer and found later new possibilities, through Memphis. In the end, under the wave of Modernism, consciously or unconsciously, all these personalities were playing around with industrial design.

2. Towards a definition

"When Charles Eames designs his chair, he does not design only a chair, instead he designs a way of being seated, he mainly designs a way of being seated, he does not design *for* a function, he designs a function".[211]

If, as explained in the previous chapter, industrial design could not be identified with small-scale production nor an avant-garde, the next task to undertake is to analyse the definitions provided during the 1950s in an attempt to clarify what the new field was.

Before looking at the theoretical approaches employed by scholars with different backgrounds, presented in the final part of the thesis, it is useful to look at a list of examples, provided at the end of the decade, by the American industrial designer Jay Doblin (1920–1989), who edited in 1959 the survey "100 Best Designed Products",[212] for the magazine *Fortune* and reproduced with Fig. 68. According to 100 leading designers, architects and experts from all over the world, had been asked what their favourite objects were, the best products were the typewriter Lettera 22, designed by Nizzoli for Olivetti in 1947, followed by the side-chair designed by Charles (1907–1978) and Ray (1912–1988) Eames for Herman Miller, also in 1947 and the classic Barcelona chair, designed by Mies van der Rohe (1886–1969) in 1929 and reproduced by Knoll Associates from the end of the 1940s. The typewriter and the two models of chairs were the expression of a modern way of working and living, thanks to their design; therefore distinguishing design and industrial production, were the key factors that the three

[211] E. Sottsass, "Opinione sul disegno industriale", in *Domus*, No. 308, July 1955, p. 34 ["Quando Charles Eames disegna la sua sedia, non disegna soltanto una sedia, ma disegna un modo di stare seduti, anzi disegna soprattutto un modo di stare seduti, cioè non disegna *per* una funzione, ma disegna una funzione", translation Claudia Marfella].

[212] J. Doblin, "100 Best Designed Products", in *Fortune*, April 1959, pp. 135–141.

objects had in common. However, how to establish design quality and how to decide which objects should be included in the new field, was one of the main concern expressed in the aftermath of the Second World War, by associations, national organizations, professionals and several other institutions. Before looking at some conclusions reached, because the aim of this chapter is to underline definitions provided for industrial design, it is interesting to analyse the meaning of the term and its use in various countries. Within the thesis, these explanations will help to have a better understanding of the values that mass-produced objects acquired during the 1950s.

In the Anglo-Saxon context 'industrial design' is a compound form that combine two concepts: industry and project. The word 'industry' reminds us of production, innovation, technology and many others factors, while 'design' has a complex meaning, as underlined in more recent years by the philosopher and writer Vilém Flusser (1920-1991), in his short essay "On the Word Design" (1990).

> In English, the word design is both a noun and a verb (which tells one a lot about the nature of the English language). As a noun, it means - among other things - 'intention', 'plan', 'intent', 'aim', 'scheme', 'plot', 'motif', 'basic structure', all these (and other meanings) being connected with 'cunning' and 'deception'. As a verb ('to design'), meanings include 'to concoct something', 'to simulate', 'to draft', 'to sketch', 'to fashion', 'to have designs on something'. The word is derived from the Latin signum, meaning 'sign', and shared the same ancient root. Thus, etymologically, design means 'de-sign'.[213]

Because of the variety of its meanings the term 'design' is associated with several activities, as, for instance, fashion,

[213] V. Flusser, "Vom wort design," in *Design report. Mittelungeb über den Stand der Dinge*, No. 15, December 1990 [translated in English: "On the Word Design. An Etymological Essay", in *Design Issues*, No. 3, Autumn 1995, pp. 50-53].

graphic and interior,[214] and it is used in many countries. In Italy the word is often connected with the attribute 'industrial' and it is literally translated as 'disegno industriale'. The word 'disegno' (which in English means 'drawing'), shares with 'design' the same etymological root and the same odd qualities, underlined by Flusser. It derived from the Latin 'signum', is both a noun and a verb, and has several meanings. Nevertheless, in Italy, the introduction of the English word 'design' (progressively entered in the Italian dictionary from the late 1940s), was put side by side with 'disegno' and used for different purposes. 'Disegno' has the same meaning as the English word 'drawing', while 'design' is employed in Italy in connection with creative products or projects, made in different fields.

In other European countries, the expressions used to identify industrial design objects also have interesting origins. In Germany, for instance, the term applied since the years of the Bauhaus was 'gestalt', which means 'shape' or 'form'. The use of this word seems to suggest that to design means to find the right 'form' of the objects, the ideal one. The other concepts connected with 'gestalt' from the late 1940s, were 'beauty' - with aesthetic connotations - and 'function'. One of the first to underline the necessity of achieving these characteristics in designing objects, was Max Bill, who studied at the Bauhaus between 1927 and 1929. First involved in the Parisian group "Abstraction-Création", from 1932 to 1936 and then in the Swiss group "Allianz" from 1937, Bill started his commitment to education in the years after the war. In 1948, he delivered courses at the Darmstadt University of Technology and, eventually on the basis of his experience as student at the

[214] An example of the extensive use of the word was provided by the exhibition: C. Breward and G. Wood (eds), *British Design from 1948-2012: Innovation in the Modern Age*, op. cit.

Bauhaus, he conceived his early theories on industrial design.[215] Again in 1948 during the annual conference of the Swiss Werkbund, an association of artists and designers founded in 1913, Bill delivered a lecture under the title "Beauty from Function and as Function", in which he claim the duty of the designers:

to make useful, ethical products that are true to materials and manufactured under socially responsible conditions, using the best means available.[216]

For the versatile Bill it was a "moral responsibility" for an industrial designer to understand society and needs and to design products that considered new necessity, new social use, practices, fashion and taste. The new professional figure, had to find the "truth of materials", the "fulfilling of function" and achieve a "beauty from function".[217] "Die gute Form", known also as "La forme parfaite" or "The good form" was, in fact, the name of the exhibition organized by the Swiss artist in Basel in 1949,[218] that became an annual design award, organized from 1952 to 1969 (Fig. 69). The other word much in use at the time was 'form' - with the same spelling in German, 'forma' in Italian and 'forme' in French. It was probably Bill who coined the expression 'product form' in order to describe products whose characteristic feature was their shape.

It is the form that gives you an indication of the kind of product that you are dealing with. The form is the semantic expression

[215] Among the first objects designed by Bill, there are the typewriter "Patria" (1944), the three-legged chair and table (1949) and the successful Kitchen clock for Junghans (1951). M. Bill, *Form, Function, Beauty = Gestalt*, op. cit.; J. Bill, *Max Bill am Bauhaus*" Benteli, Bern 2008; M. Bill, *Funktion und Funktionalismus. Schriffen 1945-1988*, Benteli, Bern 2008; "My Experience of Product Design", in *Form, Function, Beauty = Gestalt*, op. cit., pp. 23-27.

[216] M. Bill, "Scönheit aus Funktion und als Funktion," in *Werk* 8, 1949, pp. 272-274.

[217] M. Bill, *Form, Function, Beauty = Gestalt*, op. cit.

[218] "Die gute Form", exhibition booklet, Schweizerische Mustermesse, Basel, 7-17 January 1949. See: *Max Bill's View of Things. Die Gute Form: An Exhibition 1949*, Lars Muller, Zurich 2015.

of a product.[219]

According to Bill, industrial objects should express their function through their form and it was probably in relation to this assumption that Ettore Sottsass, in the quotation at the beginning of this chapter, stressed the fact that Charles Eames with his chairs was designing a "way of being seated" and, as result, he was designing "a function".

In France, industrial design was regarded with a philosophical attitude. During the 1950s, in fact, the common form used for the new discipline was *'l'esthétique industrielle'* ('industrial aesthetic'), which gave to the concept a philosophical connotation, normally employed for artworks. Beyond the historical resistance of the country in the inclusion in its dictionaries of foreign words,[220] the use of 'esthétique' in place of 'design', showed a metaphysical approach, that would be underlined in France, through several discussions around the field. In fact in 1952, a panel of French architects, industrialists, designers and philosophers, members of the *Institut d'esthétique industrielle*,[221] published the *"Charte de l'esthétique industrielle"* ("Industrial Design Plan"), the first ethic code for French industrial designers. According to the Charte *"L'esthétique industrielle"* was:

> The industrial aesthetic is the science of the beauty in the field of industrial production. This is the realm of the premises and working environments, the means of production and products.[222]

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[219] Bill referred that he was the first one who used the expression in 1950. See: M. Bill, "Definition of the term 'Product Form' (1957)," republished in *Form, Function, Beauty = Gestalt*, op. cit. p. 103.

[220] A panel forming part of the French Ministry of Culture is responsible for controlling the use of the language and eliminating foreign expressions from the dictionary.

[221] The Institut d'Esthétique industrielle was founded in February 1951 by Jacques Viénot (1893–1959). In 1984 the Institute changed his name in Institut Français du Design.

[222] "Charte de l'esthétique industrielle," in *Esthétique industrielle*, No. 7/8, 1952 ["La science du beau dans le domaine de la production industrielle. Son domaine est celui des lieux et ambiances de travail, des moyens de production et des produits"].

Industrial design was considered "the science of the beauty" and had precise characteristics, summarized in 13 laws:

1. Law of economy; 2. Law of employability and functional value, 3. Law of unity and of composition 4. Law of harmony between appearance and use; 5. Law of style; 6. Law of evolution and relativity; 7. Law of taste; 8. Law of satisfaction; 9. Law of movement; 10. Law of hierarchy and finality; 11. Commercial Law; 12. Law of integrity; 13. Law of implied Arts.[223]

The sequence of laws was built around the two concepts of beauty and function also promoted by Bill,[224] and were inspired by the philosopher Paul Souriau (1852-1926), author of *"La beauté rationelle"*, a crucial essay for the notion of rational aesthetic and source of inspiration for the *Institut d'esthétique industrielle.*[225] Because the new artistic discipline was included in France in an aesthetic framework, it was necessary, to the scholars, to implicate a philosophical approach.

One of the main promoters of the French code, the designer Jacques Viénot,[226] founder of the *Institut d'esthétique industrielle,* was also involved in an active role in the formation of the International Council of Societies of Industrial Design

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[223] J. Le Boeuf, *Jacques Viénot (1893-1959) Pionnier de l'Esthetique industrielle en France,* Pu Rennes, Paris 2006 [1.Loi d'économie, 2. Loi de l'aptitude à l'emploi et de la valeur fonctionnelle, 3. Loi d'unité et de composition; 4. Loi d'harmonie entre l'apparence et l'emploi; 5. Loi du style; 6. Loi d'évolution et de relativité; 7. Loi du gout; 8. Loi de satisfaction, 9. Loi du mouvement; 10. Loi de hiérarchie ou de finalité; 11. Loi commerciale; 12. Loi de probité; 13. Loi des arts impliqués].

[224] M. Bill, *Form, Function, Beauty = Gestalt,* op. cit.

[225] P. Souriau, *La Beauté rationelle,* Felix Alcan, Paris 1904.

[226] Jacques Viénot was a French designer, author of the book "La République des Arts", published in 1941, considered as the preface of the creation of the Institute de l'esthétique industrielle. In 1945 Viénot founded the magazine *Art Prèsent,* which had a great attention to any form of visual arts. In 1949 he opened the first French design agency, "Technèc" and in 1951 he founded among others the Institut d'Esthétique Industrielle. With the promotion and the publication of the code, Viénot opened new perspectives for the modern conception of society. See: Le Boeuf, J. "Jacques Viénot and the Esthétique industrielle", in *Design Issues,* Vol. XXII, n. 1, Winter 2006; J. Le Boeuf, *Jacques Viénot (1893-1959) Pionnier de l'Esthetique industrielle en France,* op. cit.

(ICSID). Vienot was one of the first professionals to propose the creation of an international association which representing the interests of industrial designers. His proposal was presented in Paris in 1953, during the international congress at *Institut d'esthetique industrielle.* A formal committee was formed in 1955 and the official foundation took place in 1957, in London. Two years later, in 1959 in Stockholm, during its first congress, ICSID provided the first definition for industrial designers:

> An industrial designer is one who is qualified by training, technical knowledge, experience and visual sensibility to determine the materials, mechanisms, shape, colour, surface finishes and decoration of objects which are reproduced in quantity by industrial processes. The industrial designer may, at different times, be concerned with all or only some of these aspects of an industrially produced object. The industrial designer may also be concerned with the problems of packaging, advertising, exhibiting and marketing when the resolution of such problems requires visual appreciation in addition to technical knowledge and experience.[227]

To ICSID several factors combine to bring about an industrial designer and a good training was one of these factors. During the 1950s various faculties had courses on design, but the two institutes seen as models for a right education to provide to young designers, were the Illinois Institute of Technology Institute of Design in Chicago (Fig. 70) and the Hochschule für Gestaltung (HfG) in Ulm (Fig. 71). Both were named the 'New Bauhaus' and were established on the same principles of the school founded by Gropius. The IIT Institute of Design was born before the war, in 1937, under the initiative of Moholy-Nagy, who directed the school until 1945; Moholy-Nagy summed up his theory on art, practice and teaching in the book "Vision in Motion".[228] As explained in the first chapter of this section, the Hochschule für Gestaltung was founded at the beginning of the 1950s, by Inge Aicher-Scholl, Otl Aicher and Max Bill. Bill was a

[227] ICSID Congress, Stockholm, September 1959.
[228] L. Moholy-Nagy, *Vision in Motion*, op. cit..

former student at the Bauhaus and he was the Hochschule für Gestaltung's director from 1953 to 1957.[229]
Thanks to the IIT Institute of Design and the Hochschule für Gestaltung, in America and in Europe, it was also possible to find schools with the same aims of the original Bauhaus, created by people directed involved with the original institution. These institutions became a model for other educational programmes, in Europe as in the United States.

Going back to the terms employed in connection with industrial design objects and with their qualities, 'Die gute Form' defined by Bill in Switzerland, was called 'Good Design' in Great Britain and in the United States. The expression was used for a prize established in 1950 by the American architect Edgar Kaufmann Jr. (1910–1989), Director of the Industrial Design Department at the Museum of Modern Art in New York. The initiative was carried along with Ray Eames, Russel Wright (1904-1976), George Nelson (1908-1986) and by the Finnish architect Eero Saarinen (1910–1961).
Under the title of 'Good Design' Kaufmann organized also a series of exhibitions, from 1950 to 1955, at the Museum of Modern Art in New York, with the aim of promoting modern objects and furnishings in American houses (Fig. 72). A label with the writing 'Good Design' was provided at cost to manufacturers and distributors for objects and goods included in the exhibition.[230] It is also relevant to remember that the Department of Architecture and Industrial Art, at the Museum of Modern Art, opened in 1932 and a Design Collection was inaugurated in 1934, with an exhibition entitle "Machine Art", curated by the American architect Philip Johnson (1906–

[229] R. Spitz, *HfG Ulm. Concise History of the Ulm School of Design*, op. cit.
[230] News reported in "Good Design", in *Design*, No. 52, April 1953, p. 7.

2005).[231] In the first phase of Modernism, the expression 'machine art' indicated appliances and industrial products and, as provided by several examples in the first part of the thesis, the word 'machine' was applied in an extensive way, to indicate modernity and contemporary objects.

In Great Britain the notion of 'Good Design' was promoted by the Council of Industrial Design (now named Design Council),[232] through its magazine *Design*. In the editorial of the first number Gordon Russell, its director, explained that:

> good design always takes into account the technique of production, the material to be used, and the purpose for which the object is wanted.[233]

In the same article Russell was also concerned about consumer demands:

> What does the consumer demand in a manufactured article? He demands something which is well made of good and suitable materials, which does its job efficiently and gives him pleasure, at a price he can afford to pay.[234]

Over the years the magazine stressed the fact that 'good design' provides 'good business', publishing articles with examples of successful products.[235] *Design* was also dedicated to consumer education, or rather, developing the taste of the growing middle classes. Some articles, for instance, presented furniture with modern design compared to some with a more traditional

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[231] *Machine Art,* exh. cat., Museum of Modern Art, New York, 5 March-29 April 1934.

[232] The Council of Industrial Design was founded in December 1944 by the economist and politician Hugh Dalton (1887-1962). The Council first director was S.C. Leslie, succeed in 1947 by Gordon Russell.

[233] G. Russell, "What is Good Design?", in *Design*, Vol. I, No. 1, January 1949, pp. 2-6.

[234] Ibid.

[235] "Good Design proved Good Business", in *Design*, No. 34, October 1951, pp. 12-13; "Good Design, Good Business", in *Design*, No. 39, March 1952, pp. 30-31.

style, both at the same cost, but with a subtle suggestion that the modern ones were better.[236]

Another extensive answer to the question "What is good design?", was provided in 1960 by the British engineer and designer Bruce Archer (1922-2005):

Good design works; good design is safe; good design is fitted to the user; good design appeals to its public; good design is profitable. [...] The only way to recognize good design when it appears, therefore, is to become immersed in all the interests which represent the spirit of our time, to be aware of what has gone before, to notice the response of both discriminating and less discriminating users to old and new designs, and then to make a personal and intuitive judgment.[237]

At one point, in several articles published by the British magazine the word 'design' was substituted by the word 'form', probably resulting from a wider international diffusion of Bill's ideas. In a survey carried out in 1956 by John Beresford-Evans and divided into three articles, the objects presented were under the umbrella of 'good form', however without the aesthetic implication that will be presented in the last section of this thesis.[238] Beresford-Evans mainly discussed the question in relationship to form and function and he guided the reader through examples and pictures of objects (from cookers to toasters), to identify why these goods might be useful or might be not useful. With a final conclusion:

Good form, then, is an amalgam of a number of qualities which combine to give us a complex sense of pleasure, security and wellbeing. [...] There is no golden rule of good form, no single

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[236] P. Reilly, "Same room: same cost...", in *Design*, No. 52, April 1953, pp. 8-11.

[237] B. Archer: "What is Good Design?", in *Design*, No. 137, May 1960, pp. 28-33; "What is Good Design?", in *Design*, No. 140, August 1960, pp. 26-31.

[238] J. Beresford-Evans: "Good Form 1", in *Design*, No. 88, April 1956, pp. 15-23; "Good Form 2", in *Design*, No. 92, August 1956, pp. 36-41; "Good Form 3", in *Design*, No. 93, September 1956, pp. 36-40. Beresford-Evans was the author of the book *Form in engineering design: The study of appearance during development*, Clarendon Press, Oxford 1954.

path by which it may be reached, but a way of though and an awareness of the possibilities that lead us towards it.[239]

It is likely that the notion of design as *Gestalt* promoted by Bill also influenced the title given to another historical exhibition, already mentioned within this thesis, "*La forma dell'utile*", which took place during the IX Triennale, in Milan in 1951. "La forma dell'utile" was organized by the architects Lodovico Barbiano di Belgioioso (1909-2004) and Enrico Peressutti (1908-1976), with the cooperation of Franco Buzzi Ceriani. Bill, already a well-known personality in the Milanese circle, was responsible for the exhibition graphics. Furthermore, for the same edition, he was the curator of the Swiss pavilion, awarded with the first prize as best exhibit. Bill took also part at the congress "Divina proporzione", organized by the IX Triennale, mentioned in the first part of the thesis.[240]

In the huge and heterogeneous environment of the Triennale, which included all sorts of objects, from visual arts to handicraft, the exhibition organized by Belgioioso and Peressutti, was probably the first one in Italy to present only industrial design objects. "La forma dell'utile" was located in a rectangular room, traversed by metallic cables, which supported photographic documents that explained the evolution of industrial design. On bases were allocated the objects: various electronic supplies from different brands (fridges, dishwashing machines, freezers...), the Lexicon 80 and the Lettera 22 by Olivetti, lamps by Arredoluce, office clocks by Solari, Phonola, the Vespa by Piaggio and many other kind of goods. At the entrance there was a sculpture made by another

[239] J. Beresford-Evans, "Good Form 3", op. cit..
[240] With Le Corbusier and Rogers, Bill was involved in a panel that aimed to publish the conference papers. The project was never accomplished because Bill became fully absorbed by the launch of HfG at Ulm. See: A.C. Cimoli and F. Irace: *La Divina Proporzione. Triennale 1951*, op. cit..

Swiss artist and designer Max Huber (1919-1992)[241] and at the exit there was a clay sculpture by made by the Italian Agenore Fabbri. At the exit there was also a panel with 50 pictures of American industrial products, made by members of the Society of Industrial Designers (SID). The presence of up-to-date technological appliances along with different kind of designed objects, as the manifestation of modernity, was a sort of practical example for the definition of industrial design.

In the text written for the catalogue the curators used the concepts already promoted by Bill, 'form', 'beauty' and 'function':

Today we plan to take all beauty of form from the coherent expression of practical needs, respect for the material used, the same technical efficiency of the object.[242]

In the end of their preface Belgioioso and Peressutti stated that these assumptions derived from Adolf Loos and Henry van de Velde,[243] but for sure the part played by Bill for the overall concept of the exhibition was quite significant.

Beyond the Triennale, in Italy in the post-war period, the definition and the recognition of industrial design as a new discipline, took place mainly on the pages of the magazines,

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[241] Educated at the Kunstgewerbeschule in Zurich, Huber started his career in 1935 by working for an advertising agency. Later he became freelancer for the Swiss graphic industry Conzett&Huber, where he met Max Bill. In 1940 he moved to Milano to join the Studio Boggeri but he went back to Zurich during the war. In Switzerland he joined the group Allianz, along with Bill, Leo Leuppi (1893-1972), Richard Lohse (1902-1988) and Camille Graeser (1892-1980). After the war he went back to Italy where he carried on his career.

[242] *IX Triennale,* op. cit., p. 61 ["Oggi ci si propone di trarre ogni bellezza della forma dalla coerente espressione delle necessità pratiche, dal rispetto del materiale impiegato, dalla stessa efficienza tecnica dell'oggetto", translation Claudia Marfella].

[243] Most likely the books mentioned were A. Loos, *Ornament und Verbrechen,* Innsbruck, 1908 [translated in English: *Ornament and Crime,* London 1913] and H. van de Velde, *Kunstgewerbliche Laienpredigten,* Berlin 1902. As will be explained in the final section of the thesis, these essays were often quoted by Reyner Banham in his articles and by Gillo Dorfles in his book "Introduction to Industrial design".

Domus and *Stile industria*.[244] The needs of modern living expressed by a well-educated society, allowed new objects produced by industry, to enter into common use in a preponderant way. At the same time, it was necessary to justify the attention to industrial production, as evident in the following paragraph:

Mass production does not at all mean a repetitive production of precise objects, instead it means only the creation of technically and economically precise models, deliberately made for a repeated production. It would be silly at the present condition of the world to exclude this aspect of human work. It would be silly and also impossible because it is a reality, result of our brain (maybe the most typical result of today). We have to go toward to this production with a lively intellectual interest and with critical awareness; we have to demand originality and a price which has a technical *duty* to be unbeatable, commensurate with a perfect functionality, solidity, duration, simplicity.[245]

Already in the 1940s in issue after issue of *Domus*, industrial design acquired a progressive space, until the achievement of a specific column, born in 1949 with the title "Disegno per l'industria" ("Design for Industry"). The column presented a variety of objects (desk lamps and handles designed by Achille and Pier Giacomo Castiglioni,[246] new models of Ferrari and Fiat,[247] typewriters designed by Nizzoli for Olivetti and defined

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[244] The magazine *Stile Industria* was founded in 1954 by the Italian architect and critic Alberto Rosselli (1921–1976). See: P. Spadolini, *Architettura e sistema*, Edizioni Dedalo, Bari 1985.

[245] M.T., "Consigli per la casa", *Domus*, n. 226, vol. I, 1948, pp. 1–3. ["*Serie* per noi non vuol dire affatto produzione ripetuta di cose che possono essere esatte, ma vuol dire soltanto creazione di modelli esatti tecnicamente ed economicamente, fatti apposta per la produzione ripetuta. Sarebbe idiota nella condizione generale del mondo escludere questo aspetto del lavoro umano. Sarebbe idiota ma sarebbe anche impossibile perché essa è una realtà, frutto del nostro cervello (forse il frutto più tipico d'oggi). Noi dobbiamo andare incontro col più vivo interesse intellettuale e con consapevolezza critica a questa produzione, dobbiamo esigerne l'originalità e il prezzo che ha il *dovere* tecnico di essere di imbattibile buon mercato, commisurato alla perfetta funzionalità, alla solidità, alla durata, alla semplicità", translation Claudia Marfella].

[246] A. Rosselli, "Disegno per l'industria", in *Domus*, n. 242, January 1950, pp. 32–33.

[247] A. Rosselli, "Disegno per l'industria", in *Domus*, n. 250, September 1950, p. 67.

as "industrial art"[248]) and it was edited by the architect Alberto Rosselli, who later founded the magazine *Stile industria* and was one of the promoters of the *Associazione per il Disegno Industriale* (ADI)[249] Like the Council of Industrial Design and *Design* in Great Britain and the *Institut d'esthétique industrielle* in France, the Triennale, the *Associazione per il Disegno Industriale, Domus* and *Stile industria* were in Italy the main reference for industrial designers and consumers. They were responsible for the spread of new taste and for the education of Italian modern society.

In conclusion, the expressions in use for industrial design objects, the definitions provided by professionals, the initiatives and the exhibitions organized by national associations across Europe and in the United States, have been briefly presented in this chapter in order to show how much the new field received attention from the international community of scholars, architects and designers. The third part of the thesis will explain, by analysing the thinking of Reyner Banham and Gillo Dorfles, the directions in which the attitude toward industrial design would influence architecture, design, visual arts and cultural studies.

[248] "Allo stile di un'azienda corrisponde lo stile di una produzione", in *Domus*, n. 233, February 1949, pp. 32-33.

[249] The "Compasso d'oro", an industrial design award, was promoted in Italy in 1954 by the store La Rinascente. It was born from an idea of Gio Ponti and Alberto Rosselli and allowed design to achieve progressive acknowledgement as new discipline. See: "L'estetica del prodotto alla Rinascente", in *Domus*, n. 290, January 1954, p. 64; "Discorso di Gio Ponti alla consegna del Compasso d'oro", in *Domus*, n. 325, December 1956, pp. 37-38; "Il "compasso d'oro della Rinascente". Per l'estetica del prodotto", in *Domus*, n. 293, April 1954, pp. 67-68; A.R., "Il nuovo disegno industriale", in *Domus*, n. 290, January 1954, p. 63.

3. Cross connections

In a picture published in *Architectural Review* in 1952[250] (Fig. 73) there are five men, seen in a street, outside the houses of a village. In the foreground, seated on a wooden chair, one of the men is looking forward; in the background, on the left, another one props himself against the door and looks at the camera; in the middle two others pose for the picture; the one on the far right is looking at the seated man. He is the younger and appeared as an intrusive, for his striped polo shirt, in contrast with the white shirts, the classic jackets, and the cardigans, worn by the others. The young man is Eduardo Paolozzi and the place is Viticuso, a small village near Frosinone, where Paolozzi's family came from. The seated man is Michelangelo Paolozzi, grandfather of the artist, the others are villagers. The photographer is Nigel Henderson.[251]

In the circle of artists gathering around the Institute of Contemporary Arts, Eduardo Paolozzi was certainly a source of information about Italian culture. His first visit to Viticuso was at the age of 3, in 1927, and from 1936 to 1939 he regularly spent his summers at the Italian fascist youth camp, in Colonia Marina, Cattolica, near Rimini. According to Robin Spencer, who edited a collection of writings and interviews of Paolozzi, the artist "still felt Italian, and an outsider".[252] As a young man, it was probably difficult to accept the contradiction of the war. Born in Leith, in north Edinburgh, from Italian parents,

[250] A. Ballantyne, "Italian scrapbook", in *Architectural Review*, February 1952, Vol. 111, No. 662, pp. 82-91.

[251] Henderson and Paolozzi made the trip to Italy in the late summer 1952. They went to Venice, probably for the Biennale where Paolozzi exhibited a sculpture and where the two met Peggy Guggenheim, who they had previously encountered in Paris. They then went to Viticuso for the Feast of S. Antonio, patron of the village, and after that to Naples. He also visited Viticuso with Fredia Elliott, who later became his wife, in September 1948, again for the Feast of the patron.

[252] R. Spencer , op. cit., p. 5.

Eduardo and his family were seen by the British as the enemy during the conflict. In 1940, Paolozzi was interned at Saughton for three months; his father, grandfather and uncle, who had also been detained, drowned in the *Arandora Star*, the ship sunk by a German submarine, during its journey to Canada.

It was probably because of his ambivalent feelings toward Britain that Paolozzi went to Paris in 1947, with the intention to live there forever. His attitude toward Paris was quite close to the one manifested by Italians, while, on the contrary, according to him, British artists "knew nothing about the life beyond the Channel".[253]

Since the end of the nineteenth century, the French city was seen from Italy as the heart of the avant-garde and as an endless source of inspiration.[254] It was not by chance that in 1909 Filippo Tommaso Marinetti wrote the Futurism Manifesto in French, published in *Le Figaro*, or that Giorgio De Chirico started his first metaphysials paintings in Paris (1909-1913), with the support of the poet and critic Guillaume Apollinaire (1880-1918).

Going back to the picture and to the accompanying article by Alan Ballantyne published by *Architecture Review*, two opposite visions of Italian culture are evident. The first one is manifested by the picture itself, which recalls the ancient traditions of a remote village and its community. The contradictory one, is given by the content of the article, which, in contrast with the rural condition of the small place, analysed architectural projects made for several Italian cities, by the architects Luigi

[253] Ibid., p. 69.

[254] Paolozzi learned about the avant-garde by reading the French cubist painter Amédée Ozenfant's "The Foundations of Modern art", published in English in 1931. Ozenfant (1886-1966) moved to London in 1936 and set up an Academy of Fine Arts. During his two years stay in London, he wrote articles for the magazine *Architectural Review* about his conceptions of colour and his vision of architecture.

Cosenza, Luigi Figini and Gino Pollini,[255] Gio Ponti, Giuseppe Terragni, Guglielmo Ulrich and the BBPR team, founded in 1932 by Gian Luigi Banfi, Lodovico Barbiano di Belgiojoso, Enrico Peressutti and Ernesto Nathan Rogers. During the 1950s, these personalities were quite often analysed by British magazines, in articles written by Reyner Banham,[256] Nikolaus Pevsner[257] and many others, especially for *Architectural Review*. These architects were seen inside the evolution of the Italian modern movements and their works were considered as the expression of a new spring, which took place in Italy during the reconstruction. It was also thanks to them, to Italians designers and manufacturers, that the country entered into its miracle in the 1960s.

What appears interesting in Ballantyne's article is the vision of the Italian peninsula seen from abroad. From one point of view Italy prevailed in ancient cultures, activities and traditions, as in Viticusio, while from the other there were several attempts to achieve modernity, expressed in visual arts, in architecture and, in a broader sense, in design. Eventually, it was the combination of creativity and technique that in the 1950s progressively led Italian industrial designers and manufacturers to became so well known worldwide. As argued in the first chapter of this section, to those who did not want to fully embrace Modernism, the reactions were different and expressed, for instance, in a radical way by the International Movement for an Imaginist Bauhaus in Alba or with a return to the ceramic tradition in Albisola.

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[255] Regarding Pollini and Figini, see also: "Flats in Milan", in *Architectural Review*, November 1950, Vol. 108, No. 647, pp. 285-289.

[256] R. Banham, all in *Architectural Review*: "Italian Eclectic", Vol. 112, No. 670, October 1952, pp. 213-217; "Casa del Girasole. Rationalism and eclecticism in Italian architecture", Vol. 113, No. 674, February 1953, pp. 73-77; "Neoliberty. The Italian Retreat from Modern Architecture", in Vol. 125, No. 747, April 1959, pp. 231-235;

[257] N. Pevsner, "Concrete Thriller. The works of Pier Luigi Nervi", in *Architectural Review*, Vol. 123, No. 737, June 1958, pp. 417-418.

Given that the presence in Italy of two different scenarios - old traditions and modernity - was clear even from abroad, looking at connections between architects, critics, designers, photographers, scholars and visual artists, in Italy and in Great Britain, provides an interesting intersection between varying receptions of modernity. As already identified in the thesis, in Italy part of these responses focused on industrial design, while in Great Britain the Independent Group manifested its response to modernity toward visual works and exhibitions. As will be apparent in the following paragraphs, along with Paolozzi, directly involved with Italy due to his origins, other personalities mentioned within the thesis had interesting connections with the peninsula.

In Italy, the international voices involved in Italian magazines in discussions about aesthetic problems of visual culture and industrial production, included Reyner Banham, Max Bill, Misha Black (1910-1977), Max Huber, Tomás Maldonado, Herbert Read and Walter Dorwin Teague (1883-1960), along with the Italians Bruno Alfieri (1927-2008), Giulio Carlo Argan, Gillo Dorfles, Gio Ponti, Alberto Rosselli, Ettore Sottssas and Marco Zanuso.[258] It is not so difficult to explain how these connections took form. Since the 1930s, for instance, the Swiss Max Bill and Max Huber visited Milan and started profound relationships with visual artists, architects and designers,[259]

[258] Marco Zanuso was a well-known Italian architect and designer, directed involved in the recognition of industrial design as a new discipline. He worked in close relationship with BBPR studio, was editor of *Domus* from 1947 to 1949 and of *Casabella* from 1952 to 1954. He was also co-founder of Associazione per il Disegno Industriale.

[259] Both promoted the Swiss group Allianz, which aimed to express the concrete theory of Bill, and follow the abstract and the constructivist traditions. The group was founded in 1937 under the model of the Parisian group "Abstraction-Création", in which Bill was involved from 1932 to 1936. Allianz had a deep influence in the foundation of the Italian Movimento d'Arte Concreta. See: R. Fabbri, *Max Bill in Italia. Lo spazio logico dell'architettura*, Bruno Mondadori editore, Milano, 2011.

which became closer in the 1940s. In 1947 Bill and Huber organized, at the Palazzo Reale in Milan, an exhibition entitled "Arte Astratta e concreta", with the inclusion of Hans Arp (1886-1966), Gillo Dorfles, Vasilij Kandinsky (1866-1944), Paul Klee (1879-1940), Osvaldo Licini (1894-1958), Bruno Munari, Manlio Rho (1901-1957), Ettore Sottsass, Georges Vantongerloo (1886-1965) and others.[260] Also in 1947 Huber started his long lasting work for Italian companies and institutions. He became creative director for the publisher Einaudi, was involved in different ways in the Triennale in Milan,[261] begun his cooperation with department store La Rinascente and in 1954 was awarded the prestigious Compasso d'oro.

Since 1937 Max Bill exhibited in the Swiss Pavilion for the Triennale in Milan, he was awarded with more than one Grand Prize[262] and, as already discussed within the thesis, he became even more connected with the Triennale after the founding of the Hochschule für Gestaltung in Ulm. The school was highly admired in Italy and Tomás Maldonado, an Argentinian painter, designer and thinker, who will be seen in connection with Reyner Banham in the last section of the thesis, became well known in Italy thanks to his work at the school.[263] Maldonado was also in London in 1956, at the opening of "This is Tomorrow", as evident from a picture of him carrying the cardboard cut-out of Marilyn Monroe, on display during the exhibition (Fig. 74).

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[260] L. Bombelli Tavani (ed.), *Arte astratta e concreta*, exh. cat., Palazzo Reale, Milano, 11 January-9 February 1947.

[261] Max Huber worked with Albe Steiner for the VIII Triennale in 1948 and in 1951 he was the graphic designer for "La Forma dell'utile", exhibition organized by BPR at the IX Triennale.

[262] Bill achieved the Grand Prize also during the IX Triennale, in 1951.

[263] Born in Argentina in 1922, Tomas Maldonado directed the Ulm school from 1954 to 1966. Between 1964 and 1967 he created a system of codes for the design program of Olivetti, with the German Gui Bonsiepe, and for La Rinascente. From the same years he started to teach first at the University of Bologna and than at the Politecnico in Milan.

From Great Britain, the three familiar personalities quite often involved with the Italian magazines were Reyner Banham, Misha Black[264] and Herbert Read.[265] Banham was seen as one of a new generation of critics; Black as a good example of a British architect and designer; Read as one of the most distinguished art critics, founder with Roland Penrose of the Institute of Contemporary Arts and author of "Art and Industry", viewed as one of the first theoretical essays on Industrial Design.[266] Banham apart, Black and Read were institutionally connected with the Design Council system and with the visual arts world,[267] highly admired by Italians architects, artists, critics, designers and scholars, who wished to have the same institutional connections, instead of relying on private initiatives.[268]

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[264] Misha Black was one of the promoters of the Artist International Association (AIA), founded in London in 1933 as a left-wing political organization, which held group exhibitions on political and social issues. The first one was "Artists Against Fascism and War", organized in 1935, as well as other exhibitions with themes opposed to the Nazi regime and to the Spanish Civil War. From 1959 to 1961 Black was President of the International Council of Societies of Industrial Design (ICSID) and from 1959 to 1975 he was professor of Industrial Design at the Royal College of Art in London.

[265] Sir Herbert Edward Read was a prolific critic, involved in many activities and initiatives. From 1922 to 1939, he was one of the curators of the Victoria and Albert Museum; between 1931 to 1933 he became professor of Fine Arts at the University of Edinburgh; from 1933 to 1938, he was editor of the *Burlington Magazine*; in 1947 he co-founded with Roland Penrose the Institute of Contemporary Arts; from 1953 to 1954 he became Norton Professor at Harvard University; and, finally, from the 1950s he was a trustee of the Tate Gallery. Read was normally associated with "Unit One", an art movement founded by Barbara Hepworth, Henry Moore, Paul Nash, Ben Nicholson and Edward Wadsworth, which wanted to lead British art into modernism. Read was also an expert on Surrealism, and was a promoter of the London International Surrealist Exhibition, held in 1936.

[266] H. Read, *Art and Industry*, Faber and Faber, London 1934 [translated into Italian with a preface written by Gillo Dorfles: H. Read, "Arte e industria: fondamenti del disegno industriale", Lerici, Milano 1962].

[267] Gio Ponti, Alberto Rosselli and other Italians stressed several times the opportunity of having institutions like the Council of Industrial Design (called from the early 1970s Design Council), founded in 1944 by Hugh Dalton (1887-1962), a British Labour Party politician, with the aim of promote the products of British industry.

[268] As the activities promoted by ADI or by the Olivetti Company.

From another point of view, it is equally easy to explain why there was an increasing interest from abroad in Italian culture, art and design. Soon after the Second War World, in the United States, Italian institutions applied a systematic promotion of goods, mainly handicraft and progressively industrial products. Thanks to organizations like Handicraft Development Incorporated in America (HDIA) and House of Italian Handicraft, both founded in New York in 1945 and in 1947, a strong connection was built between Italy and United States.[269] Moreover, important work to export Italian goods was done by the Centro Assistenza Distribuzione Materiali Artigianato (CADMA) in Florence and by the Compagnia Nazionale Artigiana (CNA) in Rome, with the aim of promoting visual arts, handicraft and industrial products. The travelling exhibition "Italy at work"[270] also made a contribution in spreading knowledge about Italian culture, both with a glance to rural traditions and advance achievements in industrial design. The American pioneer designer Walter Dorwin Teague (1883-1960), one of the promoters of the exhibition, was quite often involved in discussions about industrial design in Italy as in the rest of Europe. He also had a good understanding of Italian culture from his travels across the peninsula selecting objects for the exhibition.[271]

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[269] The two Organizations were born under the initiative of the Italian Max Ascoli, a key figure in the promotion of Italian products in the United States. Ascoli was born in Italy in 1898 in a Jewish family, he was persecute by the fascism and moved to America, where he received a scholarship by the Rockefeller Foundation. See: Tosiello, R. "Max Ascoli: A Lifetime of Rockefeller connections", pp. 107-140, in G. Gemelli (ed.), *The Unacceptables: American Foundation and Refugee scholars between the Two Wars and after*, Lang, New York 2000; A. Taiuti, op cit., 2007.

[270] M. R. Rogers, op. cit.; P. Sparke, "The Straw Donkey: Tourist Kitsch or Proto-Design? Craft and Design in Italy, 1945-1960", op. cit.; M. Casciato, op. cit.; C. Marfella, op. cit.

[271] In 1949 Walter Dorwin Teague with Charles Nagel, director of the Brooklyn Museum in New York and Metric R. Rogers, curator at the Art Institute of Chicago, travelled from north to south Italy in order to select objects, products and visual art works for the exhibition "Italy at work. Her Renaissance in Design Today".

A more specific contribution in the reception abroad of Italian industrial products, was given by the Triennale in Milan, though the exhibition "*La Forma dell'utile*", discussed in the previous chapter, and by the subsequent "Sezione dell'Industrial Design" in 1954 (Fig. 75).[272] Despite the fact that at the Triennale it was possible to find any sort of objects, from visual arts to handicraft, these exhibitions became the international platform from which industrial design took off. Banham, for instance, explained that Industrial Design was born in Italy exactly with the IX Triennale in 1951,[273] while Toni del Renzio admired the Italian capability in mounting exhibitions, and mentioned "Architettura misura dell'uomo" as a good example.[274] Also the following Triennale editions were well recognized in Great Britain, as evident from reviews and articles published in British magazines.[275]

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[272] *X Triennale di Milano. Esposizione internazionale delle arti decorative e industriali moderne*, exh. cat., Palazzo dell'Arte, Milanp, August-November 1954.

[273] In the afterword of the article, "Industrial design e arte popolare" (November-December 1955, No. 6, Vol. III, p. 15), Banham explained that industrial design was a young field in Italy, while in Great Britain it was born with the constitution of the Design and Industry Association, founded in 1917. The afterword are not included in the English version of the article (R. Banham, "Industrial design and Popular art", in *Industrial Magazine*, March 1960).

[274] T. del Renzio, "IX Triennale", in *Architectural Review*, December 1951, Vol. 110, No. 660, pp. 397. Connections between the mounting of the exhibitions organized at the Triennale in Milan and the exhibitions organized by the Independent Group have been presented in the first chapter of the thesis.

[275] J. Fraser, "Decima Triennale", in *Ark*, No. 14, 1954, pp. 45-47. See in *Architectural Review*: "Marginalia: Triennale di Milano", December 1950, Vol. 108, No. 648, p. 419; I. McCallum, "Labyrinth at Milan", December 1954, Vol. 116, No. 696, pp. 401-403; I. Nairn, "Exhibitions. Milan Triennale", December 1957, Vol. 122, No. 731, pp. 415-417; "The Barometer of Milano", July 1958, Vol. 124, No. 738, p. 1; R. Banham, "Neoliberty. The Italian retreat from modern architecture", April 1959, Vol. 125, No. 747, pp. 231-235; M. Brawne, "Object on view", November 1959, Vol. 126, No. 753, p. 247; "The Twelfth Triennale", July 1960, vol. 128, No. 761, p. 2; "The Twelfth Triennale", September 1960, Vol. 128, No. 763, p. 169; "The Twelfth Triennale", November 1960, Vol. 128, No. 765, p. 354-361. Concerning industrial design products, an important role in the recognition of the Italian objects, was played by Lisa Licitra Ponti (b. 1922), who wrote for the British magazines *Design* and *Architectural Review*, mainly on Italian topics. Daughter of Gio Ponti, Lisa worked with her father for the magazines *Stile* and *Domus* from 1940 to 1979. She currently lives in Milan.

Even the exhibitions organized abroad played a key part in the promotion of Italian industrial objects. Other than the ones on the Olivetti Company,[276] held in New York, London and elsewhere, the first exhibition purely devoted to industrial design was the one organized by Gillo Dorfles in 1955 at the Italian Institute of Culture in London (Fig. 76).[277] Arranged by the architect and designer Marco Zanuso with the help of Germano Facetti,[278] the exhibition included around 30 objects, from Moto Guzzi motorcycles to Arte Luce lamps. All these products created an interesting dialogue with the nineteenth-century interior of the rooms, decorated with stucco, traditional wallpapers, mirrors and fireplaces. However, to some the objects included in the exhibition appeared unusual. In fact, according to Dorfles, when the Italian president Luigi Einaudi (1874–1961), in London for an official visit, saw the exhibition, questioned why the organizers did not bring Italian paintings and sculptures, rather than ordinary objects.[279] In any case, despite the scepticism, the exhibition had a warm welcome in Great Britain and it received good reviews from the Director of the Council of Industrial Design Gordon Russell and his deputy Paul Reilly, by Read, Banham and by Theo Crosby. After all, Dorfles was already known to British scholars and

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[276] *Olivetti: Design in Industry*, exh. cat., Museum of Modern Art, New York, 21 October–30 November 1952. The exhibition in London took place during the Design Congress of 1956.

[277] G. Dorfles and M. Zanuso, *Selected Examples of Italian Industrial Design*, exh. cat., Italian Institute, London 30 June–30 July 1955.

[278] In 1956 the Italian designer Germano Facetti was included in "This is Tomorrow", as mentioned in the first section of the thesis. Facetti had an active part during the Resistance and was arrested in 1943 and deported to Gusen, an interment Austrian camp where he met Lodovico Barbiano di Belgioioso and Gian Luigi Banfi. In the post-war period, when he was back in Milan, he attended the BBPR studio and started an early career as designer. In the same years he met Mary Crittall, a young British architect who worked for the BBPR studio. They got married in 1950 and they moved to London, where Facetti started his cooperation with the British Olivetti. During the 1950s he developed an interest for graphic design and from 1960 to 1972 he became the art director for Penguin Books. In 1962 Facetti collaborated with the French writer, photographer and film director Chris Marker (b. 1921) on the science fiction documentary film "La Jetée".

[279] Conversation between Gillo Dorfles and Claudia Marfella, 13 January 2011, Milan.

critics, he was invited by the Independent Group at the ICA and delivered a lecture under the title "Aesthetics and Italian Product Design".[280] The lecture was mainly about the aesthetic qualities of industrial objects and the concept of the consumer.

Most likely, the lecture and the exhibition, along with his stay in Milan or near by during his PhD studies, were further occasions that allowed Banham to think about the Italian attitude. In *Architectural Review*, the critic observed that Italian designers had the tendency to add too much artistic value to industrial products, which he considered as something mainly made thanks to technical ability. In an answer to the Banham's article, Dorfles thought otherwise and argued that Olivetti's typewriters or Necchi's sewing machines were conceived with the same creative process as sculptures made by Henry Moore or by Barbara Hepworth.[281] It is not by chance that Dorfles mentioned two Italian firms and two well known British artists, mainly connected with Read rather than with Banham.[282] Furthermore, this comparison might be seen as an attempt to link together culture from the two countries. In any case, a deeper investigation of the contributions written by Dorfles and Banham, will be provided in the last part of the thesis.

Beyond culture and industrial design, also some Italian visual artists were acclaimed in Great Britain. In the 1950s, Lucio Fontana was probably the most popular contemporary Italian artist known abroad, thanks to his renovation of painting, his

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[280] The lecture took place on the 1st July 1955 and was part of the series "Aesthetic Problems of Contemporary Arts", organized by the Independent Group at the Institute of Contemporary Arts in two sections between 1953-1954 and in 1955. At the Tate archive there are no record about the exact content of the talk.

[281] G. Dorfles, "Pro e contro", in *Civiltà delle macchine*, September-October 1955, Vol. III, No. 5, pp. 20-21.

[282] Barbara Hepworth and Henry Moore were co-founders of *Unit One*, the movement supported by Read.

promotion of new movements[283] and his collaboration with architects and designers.[284] He was certainly a fascinating artist who was interested in a new futuristic era:

To dominate space, man constructs for the first time the architecture of the Spatial Era: the airplane. The new fancies of art will lead us to these spatial architectures in motion.[285]

In addition to his theoretical speculation, his tubular spiral of neon on the ceiling of the Palazzo dell'Arte, presented as an installation again at the IX Triennale, seems to open new kind of relationships between art and architecture (Fig. 77). After all, as already pointed, the Triennale itself was a means for foreign scholars, critics and artists to keep up to date. Later the artist Giuseppe Capogrossi (1900-1972)[286] became known thanks to the Milanese exhibition. In fact, in 1954 for the X edition, he decorated with his peculiar pictorial language one of the walls in the interior of the Palazzo. A few years later, in 1957, he had is first exhibition in London at the ICA.[287]

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[283] Fontana is known for his "Buchi", holes made on the surface of the canvas, made since 1949, and his subsequent series "Attese", the cuts on canvas that he started in 1957. Fontana founded the Movimento spaziale in 1947 and in the same year published the first manifesto.

[284] In Ballantyne's "Italian scrapbook" discussed at the start of this chapter, he mentions the office block at the junction of via Sant'Andrea and via Senato, made by Marco Zanuso and Roberto Menghi, and Fontana's decoration of the façade with abstract dark ceramic strips. A. Ballantyne, op. cit., p. 85.

[285] L. Fontana, "Technical Manifesto given at the 1st International Congress of Proportion at the IXth Triennale, Milan, 1947", commentary by Lawrence Alloway, in *Ark*, No. 24, 1959, pp. 4-7 [The IX Triennale took place in 1951 and was during this edition that was presented the Manifesto, not in 1947 as indicated on the title of the article]. Fontana and Spatialism were also mentioned in the article: Roger Coleman, "Two Painters," in *Ark*, n. 20, Autumn 1957, pp. 24-25. Furthermore, in 1959 the cover of the n. 24 of *Ark* was dedicated to him and has his "buchi".

[286] In the early 1950s Giuseppe Capogrossi started his personal abstract language made by an original alphabetical signs, repeated several times in the canvas.

[287] *Capogrossi: Paintings 1953-1957*, exh. cat., Institute of Contemporary Arts, London 1-22 June 1957. "Book Review", in *Ark*, No. 20, Autumn 1957, p. 44.

Part III
According to the Critics

To consider the thinking of Reyner Banham and Gillo Dorfles in the 1950s and in the early 1960s, in connection with visual arts, industrial design and the perception of modernity, is to deal with two different attitudes. The British scholar looked at the value that design products had in modern society from an unconventional perspective that was, in part, sociological and anthropological rather than purely aesthetic. He was not a completely detached observer; however, on the contrary, he was seduced by American cars with futuristic and aerodynamic shapes and by television and radio sets. Banham was interested in the value that the objects had in contemporary life by way of their attractive appearance and, as will be presented in this section, proposed an alternative to the traditional aesthetic framework in order to analyse them.

Dorfles looked at industrial design with the careful attitude of a traditional art historian, involved in theoretical discussion and concerned with the positioning of the new field. Moreover, the Italian critic was not an exception. As seen in the previous part of the thesis, the need to find the right aesthetic framework in which to locate industrial design had, in fact, been a concern shown by most European critics and professionals since the end of War World II. It was in connection with that context that Banham was thinking 'out of the box'. In fact, while Dorfles was following the main concern expressed in Europe about industrial design, Banham was proposing a different angle from which to look at the problem. What made his position unusual was mainly a matter of timing. When, in fact, in the 1950s he looked at the sociological values of the new field, elsewhere other critics were focusing on academic philosophical issues.

Later, in the 1960s and in the 1970s, with the spread of popular culture his approach would be followed even by Dorfles with his book "Kitsch: An Anthology of Bad Taste",[288] as will be explained at the end of the second chapter of the third part of the thesis.

Rather than tracing the full and prolific activities of Banham and Dorfles already analysed in close and accurate studies,[289] this section aims to evaluate the ideas expressed by the two on industrial design in a specific period of time, which covers the 1950s to the early 1960s. The novelty of this part comes from the inclusion of their thinking in a wider critic context. For the first time the British critic, in his early period from 1952 to 1964,[290] is linked with other European scholars with whom he has never previously been associated. These comparisons make it is easy to understand why his approach was unique. The articles and the theories elaborated by Banham in the 1950s were, in fact, answering the current issues raised by other critics across Europe in an original way. That is why when considering his writings it is impossible to ignore the dispute between him, Tomás Maldonado and Ernesto Rogers, the contact with Dorfles and his response to Max Bill's theories. By looking at Banham in a broader picture, inside and outside his

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[288] G. Dorfles, *Kitsch: An Anthology of Bad Taste*, Studio Vista, London 1969 [first published in Italian: *Il Kitsch. Un'antologia del cattivo gusto*, Mazzotta, Milano 1968].

[289] An extensive examination of Banham's activities and theories was provided by Penny Sparke with her doctoral thesis, *Theory and Design in the Age of Pop*, op. cit, and later by Nigel Whiteley with *Reyner Banham. Historian of the Immediate Future*, op. cit. Concerning Dorfles, see: L. Tedeschi, op. cit.; F. Puppo, op. cit.; A. Tolve, op. cit.

[290] In the "Introduction" of his book *Reyner Banham. Historian of the Immediate Future*, op. cit., p. 29, Nigel Whiteley divided Banham's activity according to his place of work. The so called "early period" runs from 1952 to 1964, from his PhD studies at the Courtauld to his contribution to *Architectural Review*, in which, as pointed out by Whiteley, he provided a revision of the Modern Movement. The "high period" corresponds with the UCL years, from 1964 to 1976, "when Banham was at his most polemical and radical about architecture and design of and for the Second Machine Age". The "late" period goes from 1976 to 1988, the year of his death, when he was teaching in the United States.

involvement with the Institute of Contemporary Arts in London and the Independent Group, it is certainly possible to re-evaluate his thinking.

Dorfles's book "Introduzione al disegno industriale" (1963) acts to divide two phases of his early activity: the first being the 1950s and the second extends to the mid 1960s. The point that will be made is that all the different subjects written by him during these two decades were in some way connected with the notion of industrial design or with the discussions that were alive among others scholars and critics in Italy and elsewhere in Europe.

1. Reyner Banham – Aesthetics and Popular Art

Mass production, the impact of mass media on society and the advent of new, appealing ranges of products were all themes that fascinated Reyner Banham in his vision of industrial design. His writings connected with the new field had a unique approach, quite different from the one shown by his contemporaries, whether the Italian Gillo Dorfles, the Swiss Max Bill, the Argentinian Tomás Maldonado or by the French Jacques Viénot. These divergent conceptions came, probably, from the diverse attitudes and expectations of industrial design.

In the early 1950s, in the discussions raised around the Triennale in Milan, the Hochschule für Gestaltung in Ulm, and the *Institut d'esthétique industrielle* in Paris, industrial products were seen mainly as artworks made by the machine, with the same value as architectural projects, painting or sculpture. In France, Germany and Italy, the three countries where the individuals mentioned above were operating at the time, there was a long-lasting tradition in aesthetics and a deep concern about art classifications. In a hierarchical framework, with the established supremacy of some fields over others, it was natural to pose for industrial design, the same problems that recurred in previous centuries for architecture, painting and sculpture, defined as "noble arts". In several countries every discussion on that matter involved a philosophical perspective, with the inclusion of Neoplatonic aesthetic and thinkers like Benedetto Croce (1866-1952), Immanuel Kant (1724-1804) and Friedrich Hegel (1770-1831).

Banham was well aware of all these debates and theories and summarised them in his own way when, in 1956, he wrote

"Introduction 2: Marriage of Two Minds", for the catalogue of the exhibition "This Is Tomorrow" (Fig. 78). In a Futurist typographic style, the British critic imagined a dialogue between a male and a female mind, each of them listing people, movements and concepts connected with the idea of modernity and with the aspiration to create a union between the arts: Hegel's metaphysics; the notion of "Gesamtkunstwerk", the total art formulated by Richard Wagner; Leonardo da Vinci - the "Uomo Universale" discussed in a previous chapter - seen here as "cultural hero"; along with Max Bill and Walter Gropius. Indirectly, he recalled the latter when he mentioned the Bauhaus with its "wills and hands in free association", where the synthesis between the arts was a concrete possibility.[291] Banham also referred to Gothic cathedrals, the Middle Ages and l'Art Nouveau as examples of a union between architecture, painting and sculpture. All the individuals, the movements and the concepts listed in the introduction were carefully chosen and, as will be clarified in the following pages, they were often subjects of discussion in his articles and essays, directly or indirectly, connected with industrial design.

As Nigel Whiteley has noted in "Reyner Banham. Historian of the Immediate Future", the British critic never wrote a book on industrial design.[292] Whiteley argued that Banham made a specific distinction between history and criticism, and it is true that he used different ways of writing when he talked about architecture and when he talked about design. His conception of the new field can mainly be found in the articles and texts collected in "Design by Choice" and in "A Critic Writes".[293] In these collections it is possible to see how passionate Banham

[291] R. Banham, "Marriage of Two Minds. Introduction 2", in *This is Tomorrow*, op. cit.
[292] N. Whiteley, op. cit., p. 310.
[293] R. Banham, *Design by Choice*, op. cit.; "A Critic Writes. Essays by Reyner Banham", University of California Press, Berkeley; Los Angeles; London 1996.

was when he talked about various kinds of machines and objects. In short, when the topics were design objects, his vision seems to belong more to an enthusiastic consumer than a professional scholar.[294] However, Banham knew exactly what he was saying and to whom he was addressing his witty and unconventional considerations.

Instead of looking at the question from a philosophical angle, the British critic considered the matter from a sociological point of view, with a pragmatic attitude. The shift was in the perspective, from the objects to the consumers, with their needs and their changing tastes. Moreover, Banham was a consumer himself, fascinated by transport systems, railways, jet airliners and, above all, by Americans cars. However, he was an intellectual consumer and quite often deliberately provocative. To him, these products were the outcome of the second phase of modernity, starting from the end of the war, which he called "The Second Machine Age". As explained in his well-known book "Theory and Design in the First Machine Age",[295] the novelty of the Second Machine Age, as opposed to the First at the beginning of the twentieth century, was the wide diffusion of small machines and appliances available to everyone and not only to the elite in society. In the context of British class divisions "technology was making society not only more exciting but more democratic".[296] As will be explained in the current chapter, these concepts recur in several essays, along with the radical suggestion of adopting an "aesthetic of expendability" for industrial design products.

[294] R. Banham, "Pop Culture - Theory and Design", in *Design by Choice*, op. cit., pp. 83 - 140.
[295] R. Banham, "Introduction - The Machine Age", in *Theory and Design in the First Machine Age*, op. cit., pp. 9–12.
[296] N. Whiteley, op. cit., inside cover.

Banham's vision of the new field was probably expressed for the first time in "Space for Decoration: A Rejoinder", an article he wrote in response to the one written by John E Blake, both published in 1955 in the magazine *Design*. Blake analysed contemporary decoration in connection with the past, the American approach to design and the responsibility of designers, with a slight suspicion of the American attitude and what he defined as "change for the sake of change".[297] The issue was mainly between 'good' and 'bad' design, which disclosed that the British empirical tendency was in opposition to the application of Platonic values to mass production, as embraced by several European scholars.

Driven by the desire to present his divergent view on industrial design products, Banham expressed his opinion about the aesthetic model to adopt:

> The aesthetics of perennity are for permanent structures, built for life, for posterity - buildings, paintings, symphonies or marriages - but for producing consumable goods like automobiles, movies, cream buns, or holiday affaires, we need an aesthetic of expendability.[298]

The two pictures chosen for the article clearly exemplify the concept expressed above: an external view of General Motors' Research Centre and General Motors' Cadillac "El Camino" by demonstrating the difference between the aesthetic of "perennity" and that of "expendability". To stress his opinion, he further explained:

> The aesthetics of serial production must be the aesthetics of the popular arts, not of fine arts, and that is why the American automobile speaks a language of space concepts which belongs to science fiction and not to cubism.[299]

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[297] J. E. Blake, "Space for Decoration", in *Design*, n. 77, May 1955, pp. 9-23.
[298] R. Banham, "Space for Decoration: A Rejoinder", in *Design*, n. 79, July 1955, pp. 36-37.
[299] Ibid. The mention of Cubism was in response to Blake's article in which the critic talked about space concepts, with three-dimensional effects based on Cubist principles.

The clarification made by Banham was probably not only in relation to Blake's article but also in connection with other opinions, as expressed elsewhere:

There is another class of Modern Movement academics whose position is tougher - those, like the Swiss critic Max Bill, who seem genuinely to desire a universal product aesthetic and are sincerely alarmed by the defections of whole categories of manufactured objects from what they conceive to be the true principle of design.[300]

The quote reported above came at the end of a Banham disquisition on the machine as envisaged by the early modernists like Le Corbusier or Ozenfant. Bill, founder of the Hochschule für Gestaltung, led the discussion between beauty (with an aesthetic meaning) and function and form (in the sense of universal and Platonic ideas) and for Banham, he was an authoritative example of the aesthetic debate around industrial design. In the rest of the article, the British scholar highlights that in his essay "Automobiles", Le Corbusier talked of and praised standardisation but then, in contradiction, he compared the beauty of the Parthenon with several handcrafted motorcars, none of which was mass produced.[301] Banham also underlined how concepts like 'utility', 'form' and 'standard' applied to design objects have been erroneously mythologised:

If we make these the last terms in the Ozenfant-Corbusier model of design process, we get a proposition of this order: objects of maximum utility and lowest price have simple geometrical shapes. To most architects this proposition would appear watertight, but to most product engineers it would appear too abstract to be useful and demonstrably false in its outcome.[302]

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[300] R. Banham, "The Machine Aesthetic", in *Architectural Review*, vol. 117, n. 700, April 1955, pp. 224-228, p. 228; reprinted in *Design by Choice*, op. cit., pp. 44-47.

[301] Le Corbusier, "Automobiles", in "Towards A New Architecture", New York, Dover Publications 1985 ["Vers une architecture", Paris 1923].

[302] R. Banham, "The Machine Aesthetic", in *Architectural Review*, cit., p. 227.

As will be seen in the next pages, a few months later Banham would provide an excellent example of this assumption.

The overall conception elaborated by the British scholar on the new field was then fully presented in "Industrial Design and Popular culture", an article first published in 1955 in the Italian magazine *Civiltà delle macchine*.[303] What Banham explicitly stated in the text was the refusal of traditional aesthetic frameworks, applied by his contemporaries to industrial products. He was well aware of the various philosophical and aesthetic theories used in various contexts across Europe. In a knowledgeable preface to the article, he discussed Adolf Loos, his acceptance of the Gesamtkunstwerk and his Platonic and romantic attitude towards the arts.[304] He mentioned Charles Blanc (1813-1882) and Julien Guadet (1834-1908) and their idea of architecture as supreme art,[305] which, according to Banham, had a great influence on Gropius and on Le Corbusier.[306] Banham also reminded the reader that Platonic aesthetic recurred quite often in writings from the end of the nineteenth century, as in the "History of Aesthetics" written in

[303] R. Banham, "Industrial design e arte popolare", November - December 1955, n. 6, vol. III, pp. 12-15 [published in English, Banham, R. "Industrial Design and Popular art", in *Industrial Magazine*, March 1960 and with the title "A Throw-Away Aesthetic", in R. Banham, *Design by Choice*, op. cit., pp. 90-93].

[304] A. Loos, op. cit.

[305] Charles Blanc was a French poet and art critic, chief editor of *Gazette des Beaux-Arts* and director of the Ecole des Beaux-Arts, where he reinstituted a program of copying from casts of the old masters. Julien Guadet was a French architect and author of the "Code Guadet", an ethical code which established the role of the architect. He also created the Architect Association. See: J. Guadet, *Élements et théorie de l'architecture*, Aulanier, Paris 1901 [translated into English: J. Guadet, *Elements and Theories of Architecture*, University of Illinois, Urbana 1916]. For the academy, following the Renaissance conception, drawing stood above all the artforms and consequently architecture, as mainly based on drawing, was the supreme art because it was mainly based on drawing.

[306] Not by chance, in "The First Proclamation of Weimar Bauhaus" (1919) architecture was located in a hierarchical position above all the others arts. In the text it was clearly stated that arts objects should refer to universal forms, with adherence to purpose (function) and material.On Le Corbusier's interest in Guadet, see: P. Turner, "The Beginnings of Le Corbusier's Education, 1902-07", in *The Art Bulletin*, vol. 53, No. 2, June 1971, pp. 214-224.

1892 by the English philosopher Bernard Bosenquet (1848-1923).[307] Banham then argued that the Platonic aesthetic was connected with universal shapes and geometric simplicity and that it was the basis of several modern movements as well as industrial products. He then returned to the concepts effectively expressed in "The Machine Aesthetic" and recalled that mass-produced objects were often considered as abstract entities designed in simple forms by following the rules of architecture. For him, these theories were responsible for the misleading consideration of standardisation, which he regarded as a special model and the opposite of the universal idea. According to him the objects were something real, manufactured by industry and not conceptual entities to be allocated in Platonic categories. For Banham, because contemporary society used and threw away everyday objects, it could not adopt the universal categories suited to architecture or the visual arts, such as "divine proportion" or "pure form". Therefore, he suggested a new methodological approach to industrial design - from cars to Technicolour films - a throw-away aesthetic instead of Platonic ideals. In accordance with Gillo Dorfles and Enzo Paci, Banham also noticed that not only were the objects expendable, but the durability of their aesthetic qualities did not last very long.[308] In order to validate his theory, Banham used as an example the engines of two cars: the Bugatti Royale Type 41, designed in 1931 (Fig. 79) and the Buick V8, designed in 1955 (Fig. 80).

The Bugatti offers a rectangular silhouette with a neutral, unvaried handcrafted surface, compartmented into forms that answer closely the Platonic ideals of the circle and square. (With these words one might also describe, say, a relief by Ben Nicholson, and we should remember that Bugatti had been an

[307] In his essay, Bosenquet quoted the famous sentence from the "Philebos" on the perfection of simple shapes such as the circle and the square.
[308] "Aesthetics and Italian Product Design", discussion between Banham and Dorfles, Institute of Contemporary Arts, London, 1 July 1955; E. Paci, "Esperienza. Conoscenza Storica e Filosofica", in *Aut Aut*, n. 27, May 1955, pp. 196-205.

art student of the same generation as the pioneers of abstract art). The Buick V8 (of 1955), on the other hand, presents a great variety of surface materials, none of them handwrought, in complex, curving, three-dimensional forms composed into a block with an irregular and asymmetrical silhouette.[309]

Then, Mondrian and Pollock were, respectively, the artists associated with the two engines. The geometric shapes and soft curves of the Bugatti were mainly handmade, like an Arts and Crafts object, with an idealistic vision of perfect Platonic forms, like the ones praised by Le Corbusier and Ozenfant; the angles and edges, asymmetric forms were visual hallmarks of the power of the Buick, made by machines without any philosophical intention.

As an expression of contemporary society, the Buick V8 came from mass production in an age of industrialisation and, therefore, as an ephemeral consumer object, could not claim long-lasting, aesthetic qualities. In the end, between the two models, "it is the Bugatti that becomes ridiculous as an object of use, by making aesthetic claims that persist long after its functional utility is exhausted".[310] The Buick V8, instead, with a sense of three-dimensionality, its power and all its qualities was a clear expression of "popular art", to be seen under a throw-away aesthetic.

The specific evaluation of the two engines is not surprising considering that Banham first trained in engineering, at King Edward VI Grammar School in Norwich, before working as an engine fitter for the Bristol Aeroplane Company. He would have pursued this career if he had not failed his Higher National Certificate (HNC), which led him to go to London and to study art and architecture history at the Courtauld.[311] So his interest

[309] R. Banham, "A Throw-Away Aesthetic", in *Design by choice*, op. cit., pp. 90-93.
[310] R. Banham, "A Throw-Away Aesthetic", in *Design by Choice*, op. cit., pp. 92-93.
[311] N. Whiteley, op. cit., p. 4.

in engines could be seen in the light of his background, while the comparison between the two models was a perfect example of how utility and functionality are not necessarily related to perfect geometric shapes.

The notion of applying "popular art" to everyday mass-produced objects and the proposal of an expendability aesthetic to be used in order to define them were the two key concepts elaborated by Banham and fully expressed in 1955. Beyond "Industrial design e arte popolare", his vision was stated in other articles, again based on cars, all written in the same year: the aforementioned "The Machine Aesthetic" (April) and "Space for Decoration: A Rejoinder" (July), and "Vehicles of Desire" (September).[312] These latter contributions were also listed by Whiteley in his extensive examination of Banham's thinking.[313] The one excluded was "Industrial design e arte popolare" for *Civiltà delle macchine* (December) that Whiteley mentioned in another passage of his book in connection with a quotation taken by Banham from Bruno Alfieri.[314] In reality, the text written for *Civiltà* appears as the most relevant because it allowed Banham to be part of the international debate alive at the time. The magazine was, in fact, read by Dorfles and by several other critics and professionals, not only Italians, gathered around the prestigious *Casabella*, *Domus* or *Stile Industria* and around the Triennale exhibitions in Milan. Bill and Maldonado were part of that context and were leading the way to the professional figure of designers, thanks to the school founded in Ulm in 1953. As was pointed out in the previous part, along with the Chicago School, the German institute was born under the legacy of Bauhaus and aimed to be a model for the production of its objects and for the education of new

[312] "The Machine Aesthetic", op. cit.; "Space for Decoration: A Rejoinder", op. cit.; "Vehicles of Desire", op. cit., p. 3.
[313] N. Whiteley, op. cit., p. 331.
[314] Ibid., p. 106.

designers. So when, in the first part of his article, Banham summarised the main aesthetic theories considered at the time and when, in several passages he stressed his position, he probably had it in mind that his radical vision was, for the most part, distant from that of the majority of other scholars in Britain and in Europe. Therefore, he was talking to a wide community, which, as will be explained in the following paragraphs, actually responded.

The proof that the article written by Banham for *Civiltà delle macchine,* was quite distant from the critical mainstream arrived on the 18th September 1958 when, during a conference organised at the Exposition Universelle et Internationale de Bruxelles,[315] the Director of the Ulm School Tomás Maldonado raised several issues, mainly connected with Industrial design as a new discipline.[316] In the introductory part of his speech, Maldonado talked about the importance of the Bauhaus in Germany, of the subsequent activities of Gropius, Albers and Moholy-Nagy in United States and underlined the fact that while the education of potential industrial designers had taken the right path, the conception of what industrial design really was, however, was far from clear. Among other topics, the talk included an extensive criticism of the article, written years before, by Reyner Banham for *Civiltà delle macchine.*[317] In the paragraph dedicated to the United States, Maldonado talked

[315] The *Exposition Universelle et Internationale de Bruxelles* was held from 17 April to 19 October 1958 and was the first major World's Fair after World War II. The Fair was prepared in 3 years and occupied 2 km2 and re-used some of the structures built on the same site for the Brussels International Exposition of 1935. It was visited by more than 42 million people. The symbol of the exposition was the Atomium, a giant model of the atomic structure of an iron crystal. For the fair, the French composer Edgard Varèse (1883–1965), considered the father of electronic music for his innovative use of electronic sources as new instruments, composed the "Poème électronique", played back from 425 loudspeakers placed in the Philips Pavilion.

[316] T. Maldonado, "Le nuove prospettive industriali e la formazione del designer", in *Stile Industria*, October 1959, n. 20, tab. XIX–XXIV.

[317] R. Banham, "A Throw-Away Aesthetic", in *Design by Choice*, op. cit.

about "styling" as a commercial variation of industrial design and as a tendency to produce objects without any cultural or artistic concern:

Stylists such as Henry Dreyfuss or Walter Dorwin Teague are sometimes condemned to hell and other times held high to the stars. Just one decision seems to be irrevocable: Raymond Loewy will be always in hell.[318]

Soon after, Maldonado introduced Banham's viewpoint:

Some time ago, one of the most knowledgeable industrial design critics, the Briton Reyner Banham, invited us to consider 'styling' as a popular art. The 'styling' of cars would be part of the same category as cinema, illustrations, fiction novels, comic novels, radio, TV, music and sport. According to Banham, cars would be more than ordinary objects, that is to say, objects that bring symbols.[319]

Then, after recounting the opinion of Banham, Maldonado expressed his disagreement. To him the "aesthetic of expendability" was not the solution for industrial designers - or stylists, as he preferred to called them - without radical ideas. Maldonado occupied the same field as Banham and gave the example of the automotive industry, which, according to him, lacked innovation and produced models with a few artificial changes made to them. He was against "change for the sake of change", to use the expression adopted by Blake, which Maldonado would have, most probably, liked. He also provided a definitive vision of what design was:

Industrial design is not an art, and a 'designer' is not an artist ... It is, without any doubt, that aesthetic consideration has ceased to represent a solid conceptual base for industrial design.[320]

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[318] T. Maldonado, "Le nuove prospettive industriali e la formazione del designer," op. cit., p. XX.

[319] Ibid., p. XX ["Uno dei critici più illuminati del disegno industriale l'inglese Reyner Banham, ci ha invitati non molto tempo fa a considerare lo "styling" come un'arte popolare. Lo "styling" dell'automobile apparterrebbe alla stessa categoria d'espressione del cinema, delle illustrazioni, dei romanzi pseudo scientifici, dei romanzi a fumetti, della radio, della televisione, della musica da ballo e dello sport. Le automobili secondo Banham sarebbero qualcosa di più di oggetti consueti, cioè oggetti apportatori di simboli", translation Claudia Marfella].

[320] T. Maldonado, "Le nuove prospettive industriali e la formazione del designer," op. cit., pag. XXI ["Il disegno industriale non è un'arte e il

In the end, Maldonado refused to consider the expendability aesthetic as a solution but he recognised that the traditional aesthetic framework could not be applied to the new field. In 1959, after a decade of discussions, this point at least was clear: to the Director of the school at Ulm, the dispute was between 'good design' and the 'throw-away aesthetic'.[321] Even Plato was put aside in favour of an empirical approach.

The reason Maldonado talked about Banham's essay three years after its publication is still unknown. Maybe he came across the piece written by Banham only in 1959 or, maybe, he just found the right occasion to clarify what in his view the designers should do. He had the opportunity to meet Banham in 1955 when he gave a lecture at the ICA[322] and again in 1956 when he went to London for the exhibition "This is Tomorrow".[323] There are no doubts about the mutual respect between Banham and Maldonado, manifested over the years,[324] (Fig. 81) but, at the same time, the British critic was presenting a viewpoint that was almost unique compared to the current European conceptions. As was shown in the previous part, there were lively discussions around the new field, raised, for

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'designer' non è necessariamente un artista... Solamente è fuori dubbio che le considerazioni estetiche abbiano cessato di rappresentare una base concettuale solida per il 'disegno industriale'", translation Claudia Marfella].

321 At one point Maldonado used the English expression "good design"; in the Anglo-Saxon context a well-made object was a good one, and this factor was a moral problem rather than an aesthetic problem. T. Maldonado, "Le nuove prospettive industriali e la formazione del designer," op. cit., p. XXI.

322 T. Maldonado, "The Pedagogical Impact of Automation", transcription from the lecture, Collection of Institute of Contemporary Arts, London, Tate Britain Archive, TGA 955/1/7/27.

323 As recalled in the previous part of this study, a famous picture from the exhibition showed Maldonado carrying the cardboard cutout of Marilyn Monroe.

324 Banham went to Ulm twice, for lectures in 1959 and in 1965. See: R. Spitz, *HfG Ulm. Concise History of the Ulm School of Design*, op. cit.. p. 61, Fig. 4 and p. 75, Fig. 5. See also: T. Maldonado, "Materials and Dematerialization: the Future of Industrial Design", in J. Aynsley and H. Atkinson (eds), *The Banham Lectures: Essays on Designing the Future*, London, Berg Publishers 2009, pp. 229-237.

instance, by the Institut d'Esthétique industrielle in Paris, the Triennale in Milan and the Ulm school in Germany. Institutions, panels, professionals and theorists had all attempted to use an aesthetic framework in treating industrial design as a renewal of traditional arts. As director of Ulm, Maldonado was involved day by day in both aesthetical and practical problems of industrial productions, and it was his primary interest to discuss new theories and new visions. His criticism was most likely a genuine attempt to formulate categories, find definitions and identify the right approach for industrial design as a new field. Nevertheless, what probably remained unclear to many was the fact that beyond the *querelle*, the issue was not about mass production, but about the notion of modernity.

Banham had received another attack a few months before the one delivered by Maldonado. This time the one to be severely disappointed was the architect Ernesto N. Rogers, director of the magazine *Casabella*[325] and Banham's supposed crime was an article on Italian Neoliberty.[326] In a short period Banham became the subject of criticisms from the pages of two of the most prestigious Italian architectural and design magazines, *Casabella* and *Stile Industria*, that, in reality, were part of the same publishing group: Domus. Banham was under examination from the same community.

In the text written for *Architectural Review* the British critic expressed his astonishment at the path that the Italian architects had recently taken: a Neoliberty tendency and a revival of Le Corbusier, instead of looking for new forms and new styles. What was surprising for Banham was this

[325] E. Rogers, "L'evoluzione dell'architettura. Risposta al custode dei frigidaires", in *Casabella*, No. 228, June 1959, pp. 2-4. Rogers was director of *Casabella* from 1953 to 1965.
[326] R. Banham, "Neoliberty. The Italian Retreat from Modern Architecture", in *Architectural Review*, Vol. 125, No. 747, April 1959, pp. 231-235.

unexpected "retreat" after the Futurist promise of new cities as suggested by Sant'Elia, the rationalist proposals embraced by Giuseppe Terragni (1904–1943), the experiences of the BBPR group, the Compasso d'oro competition and the Triennale itself, with its exhibitions and discussions on city planning and post war reconstruction, hosted since 1951. According to Banham, the turnaround was manifested in the comparisons made between a building made in 1949 in via Broletto, Milan, by Figini and Pollini, in a rationalist style, and the other construction made in 1958 in via Circo, again in Milan, by the same architects but in a style that recalled Liberty. The influence of Otto Wagner was evident in the Aquila offices in Zaule and in the interior of the Italian Pavilion at the fair in Brussels in 1958, both made by Ernesto N. Rogers. The early Le Corbusier was recognisable in Gae Aulenti's stable block in San Siro, again in Milan, while the Mackintosh legacy appeared in the Bottega d'Erasmo, made in Turin by Roberto Gabetti and Almaro d'Isola.

The main point made by Banham might be summarised in the last sentences of the article:

> It is the promise of liberty, not Liberty or 'Neoliberty', the promise of freedom from having to wear the discarded clothes of previous cultures, even if those previous cultures have the air of tempi felici. To want to put on those old clothes again is to be, in Marinetti's words describing Ruskin, like a man who has attained full physical maturity, yet wants to sleep in his cot again, to be suckled again by his decrepit nurse, in order to regain the nonchalance of his childhood. Even by the purely local standards of Milan and Turin, then, Neoliberty is infantile regression.[327]

To look ahead instead of looking back is one of the key aspects underlined by Banham. After all, a radical step forward in the architects' field was taken by the Smithsons with their opposition to the Congrès International d'Architecture

[327] R. Banham, "Neoliberty. The Italian retreat from modern architecture", op. cit., p. 235.

Moderne's establishment and with the actualisation in Britain of a new style labelled New Brutalism by Banham. Liberty was seen by him as the last of the old movements rather than the first modern style, as it was for Rogers. The director of *Casabella* replied strongly and the polemic almost took on the features of a diplomatic incident between the British and the Italian magazines. To placate the dispute, *Architectural Review* hosted a debate on Neoliberty, which involved almost all the people mentioned by Banham, amongst others. In addition to the translation into English of the main content of Rogers' article for *Casabella*, there was a placid response from the duo Figini and Pollini, directly involved in the discussion, with an explanation of the technical reasons behind the aesthetic appearance of their buildings. Among other voices, only that of Bruno Zevi, director at the time of the magazine *Architettura*, based in Rome, represented an opposition to Rogers, fully sympathising with Banham.[328] Even Sybil Moholy-Nagy took part in the discussion, probably invited as an authoritative, neutral voice, who, in reality, advocated the Italian cause. Nevertheless, her opinion seems more that of an admirer of the peninsula's past architecture and culture than that of a modernist expert.

The polemic, overall, involves several aspects, from the difficulty of the Italians in giving credit to Futurism or to Terragni because of their involvement with Fascism, and to the need to fulfil the desires of the Milanese and Turinese bourgeoisie. It is not possible here to trace all these reasons behind the Italians' choices but it is possible to draw some conclusions from what happened. By cutting away less

[328] "Neoliberty: the debate", in *Architectural Review*, Vol. 126, No. 754, December 1959, pp. 341-344, with the opinions of Federico Correa, Sybil Moholy-Nagy, Ernesto Rogers, Figini and Pollini, Bruno Zevi, Piccinato and Quillici, Cesare Brandi, Giovanni Bernasconi. See: H. Arnardóttir, "Architecture and Modernity in Post-war Milan", in R. Lumley and J. Foot (eds), *Italian Cityscapes*, University of Exeter Press, Exeter 2004, pp. 90-99.

important aspects, what essentially remains is a different conception of modernity. On one side there is Banham with his vision of industrial products, seen as symbols of a new society, and his hope for a new, contemporary environment to host them. On the other side there is Rogers as a representative voice of Italian critics, with a general opposition to American mass production and a refuge in the tradition. Despite the sarcastic epithet coined by the Italian architect ('Mr. Banham, the caretaker of the Frigidaires'),[329] for the British critic the "Second Machine Age" had already started as a "domestic revolution",[330] with electric cookers, vacuum cleaners, telephones, gramophones and many other small appliances. All these mechanised aids, part of modern life, merited, for Banham, buildings and architecture designed in a new style appropriate to contemporary society.

Another issue to consider in connection with the suspicions about American products or for the design style "Borax", quite common in Europe, was probably a political one manifested during the Cold War years. Banham, truly an admirer of American culture since his boyhood, saw the mechanical objects as symbols of modernity, a real promise for a better future, dreams achievable by anyone despite class divisions. When in 1964 the scholar wrote "The Atavism of the Short-Distance Mini-Cyclist", he discussed the political implications that the Cold War had on popular culture, and he explained how the choices of left-wing people were affected by it:

> Something very weird happened around 1946–1947 when the lines were being drawn for the Cold War. Suddenly there came a moment when it was very difficult to read *Time* or any American magazine at all, simply because of one's political loyalties. [...] There is commercial exploration in Pop culture nobody in his right mind would deny, but there is to be something else underneath, some sub-stratum of genuine

[329] "Neoliberty: the debate", op. cit., p. 348.
[330] R. Banham, *Theory and Design in the First Machine Age*, op. cit., p. 10.

feeling, a genuine desire for the thing, which has to be touched off before the market will really move.[331]

What Banham was trying to do in his text was to prove that it was possible to admire objects or products that belonged to popular culture without being associated with the political Right. He also underlined a dichotomy between the affection that he had for the culture that nourished his boyhood and the current suspicions of some people:

The live culture, the culture in which we were involved, was American pulp, things like *Mechanix Illustrated* and the comic book (we were all great Betty Boop fans), and the penny pictures on Saturday mornings; I know the entire Chaplin canon back to front and most of the early Buster Keatons [...] to accept, to enjoy, the products of Pop, the products of the entertainment industry, Detroit-styling and such things, was to betray one's political position.[332]

American cars, advertisements, comics, music, movie stars, appliances and several other objects produced by machines were for Banham the expression of modernity, icons of the future. He was also a true admirer of the United States and visited regularly from the 1960s before becoming a resident. Nevertheless, when the hope for a new era came to an end in the late 1960s, the dream of tomorrow was to decline, along with the vision promoted by Banham.[333] "The Future of the Future", the book written by John McHale and discussed in the first section of this thesis, was exactly the expression of this changed attitude.

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[331] R. Banham, "The Atavism of the Short-Distance Mini-Cyclist", in *Living Arts 3*, 1964, reprinted in *Design by Choice*, op. cit., pp. 84-89.

[332] Ibid., p. 85.

[333] According to Nigel Whiteley for Banham 'The fall from grace began in a general sense in the turbulent year of 1968, when a new political radicalism revealed the old Modernist experiences to be more a part of the Establishment than it would have believed. In the 1970s, the fall, for Banham, was accelerated by the seeming anachronism of his unflinchingly pro-technological books such as "The Architecture of the Well-tempered Environment", and was hastened by energy crises and the widespread loss of faith in progressivism as the binding myth of Western industrial society', in N. Whiteley, op. cit., p. XIII.

2. Gillo Dorfles – A Guide to Industrial Design

In 1963, after more than a decade of discussions around industrial design, the Italian critic Gillo Dorfles[334] published his crucial essay on the new field "Introduction to Industrial Design" (Fig. 82). In this short book, written in Italian and only translated into French,[335] he raised several questions and tried to define what industrial design was and which other peripheral disciplines to include in it. He gave historical records and expressed a hypothesis for the future, remarking on theoretical enquiries, problems and concepts. The text was a systematic analysis of the field and was built around several questions and possible answers. The subtitle, "Linguaggio e storia della produzione di serie" ("History and Language of Mass Production", Fig. 83), further clarified that the book was a clear attempt to explain the origin of industrial design, to define its characteristics and to underline the aesthetic value of objects made by machines. Dorfles wanted to emphasise the distinction between industrial design and handicrafts, two fields constantly confounded during the previous decade.

The fundamental assumption promoted by the book was the fact that industrial objects had both function and aesthetic value and, contrary to handicrafts and artworks, were made for mass production. In the introduction of his book, Dorfles recalled the aesthetic viewpoint expressed by the German philosopher Immanuel Kant and by the British empiricists. He talked about the common notions of "function" against "beauty", and he argued that the conception of "function" was something different from the conception of "fitness", endorsed

[334] Born in Trieste in 1910, Dorfles held a degree in medicine with a specialisation in psychiatry, but his interest in the arts constrained his career as a doctor, and he became an art and design critic, philosopher and painter.

[335] G. Dorfles, *Introduzione al disegno industriale: linguaggio e storia della produzione di serie*, op. cit.

by the empiricists.[336] At the same time, though the author showed how hard it was to formulate a clear definition for industrial design objects, he traced a course for the field and for the next generation of scholars.[337]

The book was made up of a sequence of short chapters. The first four provided historical background, with several examples of mechanical reproduction. In this part, Dorfles talked about William Morris and the Arts and Crafts Movement in Britain, before moving on to Art Nouveau and to Bauhaus. Later Dorfles highlights some crucial issues raised by the new field, such as semiotics: the symbolic value of objects, and the consequences of the notion of 'standard'.

The Italian critic also explained the distinction from industrialised architecture, with its prefabricated components, and parts made by machines. Dorfles talked about connections between the new field and painting and sculpture and he underlined the position of graphics and textile design, again in relation to industrial products. He discussed design as a system, market analysis, and technology, and he talked about the necessity of working as a team in order to create design objects.[338] On the whole, the short book took into consideration each possible aspect connected with industrial design, both from a practical and a theoretical point of view.

Despite the fact that the essay is still popular and reprinted in Italy, with a new edition published in 1972, most of its content is based on conceptions built upon in the 1950s, analysed and discussed by Dorfles himself, through magazines like *Domus* and *Stile Industria* and through the Italian Associazione per il

[336] Ibid., pp. 9-10.

[337] See also: T. Maldonado, *Disegno industriale: un riesame*, Feltrinelli, Milano 1976.

Disegno Industriale.[339] The starting point for the main content of "Introduzione al Disegno Industriale" was provided by an article written by the Italian critic for *Stile Industria* in 1956, which explained the evolution of the concept of Industrial Design:

> Until a few years ago industrial design was understood as 'executive design', on the basis of which the construction of a machine or of an object produced by machine was set. Something, in short, essentially technical that had little to do with art and culture. Today, however, the subject has begun to take on a close relationship with art and culture, and therefore with society, which is closely tied to them.[340]

According to Dorfles, because of its deep connection with society and its association with art, industrial design started to be included in theoretical discussion. In the same issue of *Stile Industria* even the role of the Italian Associazione per il Disegno Industriale was clarified, with a report from the first meeting, which included a comment provided by Dorfles himself.[341] Dorfles assert the necessity to establish a relationship between art and production, between art works and industrial objects. According to Dorfles, the aim of critics should to understand practical needs, rather than to engage with theoretical speculations. He also claimed the necessity for a company to have an art director, able to combine the aesthetic quality with production.

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[339] As reported in the previous section of the thesis, Dorfles was one of the founding fathers of the Associazione per il Disegno Industriale, established in 1956.

[340] G. Dorfles, "Evoluzione del concetto di Industrial Design", in *Stile Industria*, Vol. III, No. 7, June 1956, pp. 31-32 ["Per disegno industriale s'intendeva sino a pochi anni or sono, quel particolaere 'disegno esecutivo' sulla cui base si imposta la costruzione di una macchina o d'un oggetto prodotto dalla macchina. Qualcosa, insomma, di essenzialmente tecnico, che con l'arte e la cultura aveva ben pochi addentellati. Oggi, invece l'argomento è venuto acquistando intimi rapporti con l'arte e la cultura, e quindi con la società, così intimamente legata com'essa è alla cultura ed all'arte", translation Claudia Marfella].

[341] In *Stile Industria*, Vol. III, No. 7, June 1956: A. Rosselli: "L'Associazione per il Disegno Industriale in Italia", p. 1; "La prima riunione dell'ADI a Milano", pp. 2-3.

Going back to "Introduzione al Disegno Industriale", it can be observed that most of the bibliographical references were published in the 1940s and the 1950s, as the two essays mentioned at the beginning of the bibliographical section, as "fundamental works for the study of industrial design": "Mechanization Takes Command" by Sigfried Giedion and "Art and Industry" by Herbert Read.[342] These two were predominantly art history books, with an overall recognition of the role of technology in modern society. These essays were quite familiar to the circle of artists gathered around the ICA in London, along with "Space, Time and Architecture" and "The Pioneers of the Modern Movement" by Pevsner, listed in the bibliography.[343] Also in the bibliography were presented "Theory and Design in the First Machine Age" by Banham and "Die gute Form" by Bill, as well as other references connected with the debate alive in the 1950s.[344]

At this point, it is probably worth recounting Dorfles' experiences at the beginning of his career. As a freelance contributor to the magazines *Domus* and *Stile Industria*, he was very familiar with the arguments around industrial design. During that time he wrote several articles on a variety of subjects from the reviews of the Biennale in Venice to the new architectonic buildings and the new design products made in Italy and around the world. Then, in 1961, he was appointed Vice-Director of *Domus*, and, perhaps, "Introduzione al disegno

[342] S. Giedion, *Mechanization Takes Command: a contribution to anonymous history*, Oxford University Press, Oxford 1948; H. Read, *Art and Industry*, op. cit., 1934.
[343] S. Giedion, *Space, Time and Architecture: The Growth of a New Tradition*, Harvard University Press, Cambridge, Mass.; London 1941; N. Pevsner, *Pioneers of the Modern Movement: from William Morris to Walter Gropius*, Faber, London 1936.
[344] R. Banham, *Theory and Design in the First Machine Age*, op. cit.; M. Bill *Die gute Form*, Buchdruckerei, Winterthur 1957; "Rapport general: Congrès international d'esthétique industrielle", in *Esthétique industrielle*, Vol. 10-11, 1953; T. Maldonado, "Le nuove prospettive industriali e la formazione del designer", in *Stile Industria*, October 1959, n. 20, tab. XIX-XXIV.

Industriale" was driven by the need to clarify what was discussed in the previous decade.

In any case, in the 1950s Dorfles' career was divided between theory and practice. His work as a visual artist started with the Movimento d'Arte Concreta (MAC),[345] founded in 1948 by Dorfles himself, Bruno Munari,[346] Gianni Monnet (1912-1958) and Atanasio Soldati (1896-1953). The group was based in Milan but it attracted the attention of several artists across Italy, including Lucio Fontana and the designer Marco Zanuso. MAC had an official magazine, the *Bollettino d'Arte Concreta*, which combined theoretical content with innovative graphic design.[347] From November 1951 to June 1954, the group published 24 issues, each one with a cover designed by its members. In some of the issues were included lithography or serigraphy, again made by MAC artists.[348] In the following volumes "Documenti d'Arte Concreta", published from 1954 to 1958, among the inclusion of documents, artistic prints and experimental pages, were the "Travel Sculptures" designed by Munari. Made of thin cardboard, these folded "sculptures" were made to be carried and exhibited everywhere.[349]

Graphic design had a great influence inside the MAC, most likely thanks to the possibilities presented in Milan by the

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345 P. Fossati, *Il movimento arte concreta: 1948-1958*, Martano Editore, Torino 1980; N. Ossanna Cavadini and L. Sansone (eds), *Gillo Dorfles. Movimento Arte Concreta (1948-1958)*, exh. cat., M.A.X. Museo, Chiasso, 16 September - 21 November 2010.

346 Munari was responsible for the MAC's Manifesto: "Manifesto del Macchinismo, Disintegrismo, Arte Grafica" and "Manifesto dell'arte totale", both in *Bollettino d'Arte Concreta*, n. 10, 15 December 1952. See also: M. Hájek, and L. Zaffarano, op. cit..

347 G. Maffei, *M.A.C.: movimento arte concreta*, Bonnard, Milano 2004.

348 The first 18 numbers of the magazine were directed by Giulia Sala Mazzon, wife of Galliano Mazzon (1896-1978), active member of MAC. From No. 19 to No. 24 the magazine was directed by Franco Passoni. It was published in Milan by Officine Grafiche V. Sabaini.

349 B. Munari, *Arte come mestiere*, Laterza, Bari 1966 [English translation: B. Munari, *Design as Art*, Pelican books, London 1971].

graphic designers Albe Steiner,[350] Antonio Boggeri (1900-1989)[351] and Max Huber. In his "Introduzione" Dorfles explained the opportunity to consider graphic design as part of industrial design because it is connected with a general planning of brand and label. After all, visual artists and professional designers were involved in graphic planning in Great Britain and elsewhere in Europe. In 1959 Richard Hamilton, for instance, was responsible for the cover of a catalogue of gear cutting machines, while the covers of *Architectural Review* were designed by several people connected with the ICA, such as Theo Crosby (one of his first covers appeared in December 1956), Robert Melville (Vol. 121, No. 722, March 1957) and John McHale (Vol. 121, No. 724, May 1957).[352] Among the Independent Group great attention to graphic design was also made manifest with the invitation cards and the exhibitions catalogues for "Man, Machine and Motion" and "This is Tomorrow".[353]

Returning to Dorfles, in the 1950s, together with his artistic practice, the Italian critic started his prolific theoretical work with the writing of a short essay on the Baroque style in which he underlined a tendency in modern architecture to come back to the curved shape.[354] He also stressed this last concept in a piece published by *Domus*, where he mentioned the polemic

[350] Steiner was one of the main figures in the history of Italian graphic design. He invented the logo used for the "Compasso d'Oro" competition and he worked closely with Studio Boggeri.

[351] Boggeri ran his Studio in Milan from 1933 to 1973. He worked with Max Huber, Enzo Mari, Bruno Munari, Marcello Nizzoli, Albe Steiner and many others. Boggeri took part in the exhibitions organized by the Alliance Graphique Internationale in Paris (1951), in London (1956), in Lausanne (1957) and in Milan (1961).

[352] H. Spencer: "Graphic Design 4", in *Design*, No. 132, December 1959, pp. 36-41; "Graphic Design 5", in *Design*, No. 135, December 1960, pp. 31-37.

[353] The catalogue of "Man, Machine and Motion" was designed by Anthony Froshaug (1920-1984), while "This is Tomorrow" was designed by Edward Wright (1912-1988). The posters for "This is Tomorrow" were projects by several artists, including J.D.H. Catleugh (1920-2009), Crosby, Hamilton with the well-known "Just what is it that makes today's homes so different, so appealing?", Henderson, John Weeks (b. 1921) and others.

[354] G. Dorfles, *Barocco nell'architettura moderna*, Tamburini, Milano 1951.

between Banham and Rogers about Neoliberty, discussed in the previous chapter.[355] Again, in the field of architecture, he published in 1954 "L'architettura moderna", an essay on modern architecture, and during the 1950s he wrote several articles for the magazine *Domus* devoted to the same discipline.[356] Dorfles was also interested in the relationship between architecture and semantics, a connection being first posed in Italy by the architect Italo Gamberini (1907-1990), professor at the Faculty of Architecture in Florence.[357] In the meantime, the connection between design and semantics, discussed by Dorfles in "Introduzione al disegno industriale" was promoted by Tomas Maldonado at the Hochschule für Gestaltung.[358]

Dorfles' interest in architecture is not surprising. In the Italian aftermath of the war, the need for reconstruction and city planning and building design provided a good opportunity to look at the previous architectural styles. Adolf Loos, Walter Gropius, Le Corbusier, Erich Mendelsohn (1887-1953) and Alvar Aalto (1898-1976) all had aspects of their work analysed by the Italian critic in "L'architettura moderna". Loos with his "Ornament and Crime"[359] was considered a fundamental figure for the upcoming Bauhaus as was Gropius. Mendelsohn was

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355 G. Dorfles. "Neobarocco, ma non Neoliberty!", in *Domus*, No. 358, September 1958 p. 19.

356 G. Dorfles, *L'architettura moderna*, Garzanti, Milano 1954. Among the contributions written by Dorfles for *Domus*, see: "Architettura spontanea e tutela del paesaggio", No. 305, April 1955, p. 8 and p. 64; "L'architettura moderna può coesistere con l'antica", No. 318, May 1956, p. 9; "La 'ricerca architettonica' negli Stati Uniti e in Italia", No. 350, January 1959, p. 48; "Il congresso di Basilia", No. 361, December 1959, p. 29 and p. 74.

357 I. Gamberini: *Introduzione al primo corso di elementi di architettura e rilievo dei monumenti*, Coppini, Firenze 1959; *Analisi degli elementi costitutivi dell'architettura*, Coppini, Firenze 1961. Dorfles, G.: "Architettura e semantica", in *Domus*, No. 306, May 1955, p. 40; "Valori semantici degli 'elementi di architettura' e dei 'caratteri distributivi'", in *Domus*, No. 360, November 1959, pp. 33-34.

358 G. Dorfles, "Notiziario. Tomas Maldonado, Max Bill", in *Domus*, No. 317, April 1956, p. 52.

359 A. Loos, op. cit. See: G. Dorfles, "Loos e la Secessione" in *Domus*, No. 328, March 1957, pp. 27-28.

seen as one of the fathers of functionalism. As presented in the first section of this thesis, Le Corbusier was involved in several symposiums, while his "Modulor" and his most well known works were subjects of debate in Italy, as well as in other European countries. On the whole, architecture had an important role in the Italian theoretical debate, and it was Bruno Zevi who wrote his history of modern architecture in 1950, while Giulio Carlo Argan, another respected critic, published his essay on Gropius and on Bauhaus in 1951.[360] Furthermore, at the time architecture was considered as a complementary part of industrial design. Most of the Italians who later became famous for their objects, Achille (1918-2002) and Pier Giacomo Castiglioni (1913-1968), Vico Magistretti (1920-2006), Carlo Mollino, Ettore Sottsass and many others, were trained as architects.

In his book on modern architecture, Dorfles used several categories adopted to define industrial design, such as the renowned concepts of form and function, which were well suited to the increase of prefabricated elements in modern buildings. The other aspect to consider in "L'architettura moderna" is once again the wide bibliography, which among several others included Banham, Bill, Gieidon, Pevsner, Read and in its later edition Maldonado and the Smithsons with their "Urban Structuring".[361] These references recurred also in several others books written by Dorfles as further evidence of his interest in the Anglo-Saxon theoretical context. In reality, an explanation for that was provided by Dorfles himself in the preface written in 2003 for the reprinted edition of one of his first essays: "Discorso tecnico delle arti" ("Technical Discourse

[360] B. Zevi, *Storia dell'architettura moderna*, Einaudi, Torino 2010 (first edition in 1950); G.C. Argan, *Walter Gropius e la Bauhaus*, Einaudi, Torino 2010 (first edition in 1951).
[361] A. and P. Smithson, *Urban Structuring*, Studio Vista & Reinhold, London 1967.

of the Arts"), published in 1952.[362] In the book, Dorfles described the creative process defined by Read in "Art Now"[363] and mentioned "On Growth and Form" by Thompson as an example of the application of the golden section.[364]

In the preface, Dorfles explained that in the years after the war, the book was an attempt to create a link between European and American thinkers and the Italian aesthetic framework, strongly influenced by the thought of Benedetto Croce (1866–1952) and Giovanni Gentile (1875–1944). The "Discorso" was then one of the first aesthetic essays written by Dorfles driven by the urge to introduce into Italy the viewpoints of other scholars. By listening to foreign voices, the critic wanted to open up a theoretical discussion, identify relationships in the artistic creative process and underline their technical aspects.[365] As recalled by Dorfles, himself, in 2011:

> In the aftermath [of the Second World War] Milan became the most important centre in Italy, not only for its cultural recovery but also for its geographic position. Since the late 1930s Milan has established relationships with Zurich and Lugano, with their architects, designers and visual artists. From Milan it was also easy to go to Paris and to see what artistic groups like 'Concretion et abstraction' first and then the 'Salon des Réalités Nouvelles', were doing there. We were also in touch with Germany and with the legacy of Bauhaus. After the war we needed to renovate all these relationships, and by founding the Movimento d'Arte Concreta we wanted to set a dialogue with the rest of Europe.[366]

After all, the publication of "Discorso tecnico delle arti" and the inclusion of Dorfles in the Movimento d'Arte Concreta were not unrelated. The essay, with its attention to promoting an interaction between the visual arts, manifested a tendency very much alive during the 1950s, along with a concern about the

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[362] G. Dorfles, *Discorso tecnico delle arti*, 1952 (reprinted: Christian Marinotti Edizioni, Milano 2003).

[363] H. Read, *Art Now: Introduction to the Theory of Modern Painting and Sculpture*, Faber, London 1933, p. 51.

[364] G. Dorfles, *Discorso tecnico delle arti*, op. cit., note 25, p. 64.

[365] G. Dorfles, "Introduzione", in *Discorso tecnico delle arti*, op. cit., pp. 20–21.

[366] Conversation between Gillo Dorfles and Claudia Marfella, 13 January 2011, Milan.

supremacy of one art over another. These themes were quite often discussed in the first half of the twentieth century by several scholars, including the Frenchmen Emile-Auguste Chartier (known as Alain, 1868-1951) and Etienne Souriau (1892-1979), both mentioned by Dorfles.[367] Etienne Souriau, son of Paul Souriau, who inspired the constitution of the French Institut d'Esthétique industrielle,[368] classified the seven arts and defined them according to their sensory characteristics. Conscious of this classification, Dorfles wanted to find cohesion in the creative process of any art form, which was also the aim of the Movimento d'Arte Concreta.[369] In 1952, when the "Discorso" was published, the critic was fully involved in the movement, which tried to break down the boundaries between visual art, architecture, art and craft, design and graphic design, through debates and exhibitions.[370] Then, in modern society, the matter to pose was not only the relationships between the visual arts but also the connection between art and production, posed by industrial goods. From a theoretical point of view, "Introduction to Industrial Design", by Dorfles, was a summary of this necessity, while from a practical point of view the experimental works suggested by the MAC for industry presented a possible answer to this cooperation. An example of that was the project of making body car paintings, suggested by Dorfles, Munari, Monnet, Prampolini and several others. The project was promoted by the Montecatini Company in 1954 and presented at the XXXVI Salone dell'Automobile di Torino.[371] In reality, it was not the first attempt made by the

[367] E.A. Chartier (Alain), *Système des beaux-arts*, Paris 1920; E. Souriau, *Le correspondance des arts*, Flammarion, Paris 1947.
[368] See Part II, chapter 2 of the present study.
[369] The notion of 'Total Arts' was already suggested by Futurism during the first half of the twentieth century.
[370] P. Fossati, op. cit.; E. Crispolti and L. Berni Canani (eds), *Movimento Arte Concreta (1948-1958)*, exh. cat., Museo del Corso, Roma 31 May - 31 August 2003.
[371] G. Dorfles, "Proposte di artisti italiani", in *Stile industria*, Vol. I, No. 2, October 1954, pp. 34-35; Munari, B. "Colori nelle automobili", in *Stile Industria*, Vol. I, No. 2, October 1954, p. 33.

MAC to renovate the automotive sector; in 1952 the group organized an exhibition devoted to the motorcycle to show that collaboration was possible between artists and engineers in order to combine aesthetic problems and design planning.

The MAC has organized this exhibition not to expose or to propose new models of motorcycles or motor scooters, but to prove to the industry that there is a possibility of understanding and collaboration between technology and art.[372]

If in the early 1950s MAC provided practical examples of cooperation between art and industry, an overall discussion about industrial design would appear only with Dorfles' "Introduzione al disegno industriale", which would was to create a boundary between industrial products and any other sorts of objects made by hand. At the same time, beyond definitions and boundaries traced, there were other aspects to be considered. In the late 1950s, while Italy was entering its economic miracle, electric cookers, fridges, small appliances and mass products were changing the European way of life. In that context, industrial objects assumed a sociological meaning and achieved mythical and symbolic value, as pointed out by Roland Barthes in his "Mythologies".[373] After this analysis of contemporary habits and tastes, it seems quite interesting that in 1965, three years after the publication of his "Introduzione", Dorfles published "Nuovi riti, Nuovi miti" ("New Rites, New Myths"), an original anthropological and sociological analysis of modern society through the arts, economy, science, industry, sports and religions, fields seen alternatively as "rituals" or as

[372] The exhibition was organised at the Galleria dell'Elicottero in Milan, in March 1952. See: G. Sala Mazzon, "Il MAC presenta all'Elicottero studi per forme concrete nell'industria motociclistica", in *Bollettino d'Arte Concreta*, No. 5, March 1952, n.p. ["Il MAC ha organizzato questa mostra non per esporre o proporre dei nuovi modelli di motociclette o di motorscooter ma per dimostrare agli industriali che esiste una possibilità di intesa e di collaborazione tra la tecnica e l'arte", translation Claudia Marfella].

[373] R. Barthes, op. cit..

"myths".[374] The word "myth" recurred in his following essay, published in 1967: "L'estetica del mito. Da Vico a Wittgenstein" ("The Aesthetic of the Myth. From Vico to Wittgenstein").[375] A collection of short chapters, with great attention paid to the philosophers Giambattista Vico (1668–1744), Ernst Cassirer (1874–1945), Friedrich Shelling (1775–1854) and Ludwig Wittgenstein, the texts mainly considered the relationship between art and myth, seen within a system of communication. It is worth remembering that the thinking of Wittgenstein also fascinated Eduardo Paolozzi, who created a series of screenprints inspired by the Austrian-British philosopher, as mentioned in the chapter, "Playing around with Industrial Design". Objects with a mythical or a supposed artistic value were then discussed in one of the most famous books written by Dorfles: "Kitsch. An Anthology of Bad Taste", his only essay translated into English at the time (Fig. 84).[376]

After "Introduzione al disegno industriale", in which he clarified what design was, Dorfles considered some expressions of popular art which in some way seem to recall the approach to vernacular expressions pointed out by the British artist, writer and designer Barbara Jones (1912–1978). In 1951, in conjunction with the Festival of Britain, she designed an exhibition at the Whitechapel Gallery with the curious title of "Black Eyes and Lemonade: Curating Popular Art", which attracted about 30,000 visitors in three months (posters reproduced with Fig. 85).[377] The title was inspired by the poem "Intercepted Letters, or, The Two Penny Post-Bag", written by Thomas Moore (1779–1852) in 1813. The exhibition included common British objects that, given their ordinary features,

[374] G. Dorfles, *Nuovi riti, Nuovi miti*, Garzanti, Milano 1964.
[375] G. Dorfles. *L'estetica del mito. Da Vico a Wittgenstein*, Mursia, Milano 1967.
[376] G. Dorfles. *Kitsch. An Anthology of Bad Taste*, op. cit.
[377] *Black Eyes and Lemonade: Curating Popular Art*, exh. cat., Whitechapel Gallery, London, 11 August – 6 October, 1951.

would not normally be exhibited in museums or galleries, such as a fireplace made of tiles in the shape of an Airedale dog and a talking lemon. As underlined in 2013 during the archive exhibition with material from 1951, "Black Eyes and Lemonade" expressed Jones's conception of "popular art and museum culture, questioning the cultural values attached to handmade and machine made objects".[378] In 1951 Barbara Jones wrote and illustrated "The Unsophisticated Arts", an exploration on British vernacular art, from toys to taxidermy materials. It was based on ideas previously expressed in the magazine *Architectural Review* for whom she was a regular correspondent.[379] In her writings the word "popular" appeared as an equivalent to the word "vernacular" in a way that might be related to Paolozzi[380] and to the notion of "kitsch" as conceived by Dorfles.[381] Nevertheless, to the Italian critic, the wide diffusion of industrially made products was seen in some cases as synonymous with kitsch.

> Once we have established that the arrival of kitsch - or at least its more exuberant aspect - coincides with the arrival of the automobile, we can only expect mechanized production to nurture kitsch elements as much as, if not more than, any other elements.[382]

This statement by Dorfles could more generally be associated with the diffusion in Europe of new Americans cars. A model like the Citroën DS, in fact, considered by Barthes as the equivalent of the majestic gothic cathedrals, brought out at the

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[378] S. Costin and C. Moriarty (eds), *Black Eyes and Lemonade: Curating Popular Art*, exh. cat., Pat Matthews Gallery, Whitechapel Gallery, London, 9 March - September 2013. Quoted from the press release.
[379] B. Jones, *The Unsophisticated Arts*, Architectural Press, London 1951.
[380] C. Moriarty, "From Popular to Pop", in S. Costin and C. Moriarty, op. cit. Prints reproduced by Hammer Prints were close to the kind of illustrations made by Jones. W. Goodden, "This or That", illustration of B. Jones, Scottish Committee of the Council of Industrial Design, Edinburgh 1947.
[381] G. Dorfles, "Kitsch", in *Design*, No. 37, January 1952, pp. 4-5.
[382] G. Dorfles, "Styling and Architecture", in *Kitsch*, op. cit. p. 253.

XI Triennale in 1957 and admired by the Smithsons,[383] did not appear to be suitable for the category of kitsch.

As a whole, the collection of essays edited by Dorfles referred to some expressions of vernacular or popular arts, as well as the notion of kitsch, introduced by Clement Greenberg (1909-1994) in 1939 and recalled by Hermann Broch (1886-1951) in 1951.[384] The essays written by these two scholars were included in Dorfles' book, along with contributions written by John McHale, former member of the Independent Group; Karl Pawek (1906-1983), the Austrian publisher; Ludwig Giesz (1916-1985), the German philosopher; Lotte H. Eisner (1896-1983), the German-French historian and film critic; Ugo Volli (1948), the semiologist; Vittorio Gregotti (1927), the Italian architect; and Aleksa Celebonovic (1917-1987), the Serbian painter and art critic. All of them reflected on the spread of kitsch in different fields, from architecture to cinema, along with Dorfles, himself, who introduced several themes in connection with what he considered the diffusion of the bad taste.[385]

Looking at the evolution of mass production, retrospectively it is possible to argue that the definition of "kitsch" as a possible new aesthetic category represented a conclusive ending in the discussion around industrial design. After the 1950s and

[383] See Part I, chapter 2 of the present study.
[384] Greenberg, C. "Avant-Garde and Kitsch", in *Partisan Review*, 1939, vol. VI n. 6, pp. 34-49; H. Broch, "Kitsch als das Böse im Wersystem der Kunst", in H. Broch, *Dichten und Erkennen*, Vol. 1, Rhein Verlag, Zürich 1955, pp. 311-350. See: R. Kluger, "Kitsch and Art: Broch's Essay 'Das Böse im Wersystem der Kunst'", in P. M. Lutzeler (ed.), *Hermann Broch, Visionary in Exile*, Camden House, New Haven 2003, pp. 13-20.
[385] All in G. Dorfles, *Kitsch*, op. cit.: McHale, J. "The Plastic Parthenon", pp. 98-110; K. Pawek, "Christian kitsch", pp. 143-150; L. Giesz, "Kitsch-man as Tourist", pp. 156-174; L. H. Eisner, "Kitsch in the Cinema", pp. 197-218; U. Volli, "Pornography and pronokitsch", pp. 224-250; V. Gregotti, "Kitsch and architecture", pp. 255-276; A. Celebronovic, "Notes on Traditional Kitsch", pp. 280-290.

1960s, Dorfles' writings would be mainly devoted to aesthetic matters and art criticism, while industrial design would have a marginal position in his wider work.[386] Moreover, many things had changed: in the late 1960s, Italy assumed a leading position in the creation of industrial design objects and put aside theoretical debate. In the new era of mass production, definitions and correspondence between form and function would have a minor role. The significant use of new materials and the predominance of creativity over theory would be the main issues to consider. In the 1960s "radical design"[387] would dominate the scene. In Italy, with Archizoom Associati - the group established in 1966 in Florence by Andrea Branzi (b. 1938), Gilberto Corretti (b. 1941), Paolo Deganello (b. 1940) and Massimo Morozzi (b. 1941) - and UFO, founded in 1967 again in Florence by Lapo Binazzi (b. 1943), Riccardo Foresi (b. 1941), Titti Maschietto (b. 1942), Carlo Bachi (b. 1939) and Patrizia Cammeo (b. 1943) - until the further experimentation, presented at the landmark exhibition: "The New Domestic Landscape", organized by the Argentinian architect Emilio Ambasz (b. 1943) in 1972 at the Museum of Modern Art in New York.[388]

At this point, a cutting edge path was taken and would achieve its peak in 1981 with the foundation of Memphis, which reconsidered the Art Deco style and reinvented new forms in a way that recalled the Pop Art spirit and had a view of design quite close to that of Banham (Fig. 86). With the objects created by Ettore Sottsass and the new generation of architects and designers around him - Michele de Lucchi (b. 1951), Aldo Cibic

[386] The only other book concerning industrial design written by Dorfles is *Design: percorsi e trascorsi. Cinquant'anni di riflessione sul progetto contemporaneo*, Lupetti, Bologna 2010, edited for the first time in 1996, as a collection of articles published over the years.

[387] The expression was used for the first time by the Italian critic Germano Celant (b. 1940) at the XIV Triennale in Milan, in 1968.

[388] E. Ambasz (ed.), *Italy: The New Domestic Landscape: Achievements and Problems of Italian Design*, exh. cat., Museum of Modern Art, New York, 1972.

(b. 1955), Matteo Thun (b. 1952), Marco Zanini (b. 1954) and Martine Bedin (b. 1957) – any further discussion on form, function, good design and throw-away aesthetic had definitely ended.

Conclusion

The thesis has focus on two small groups of people, who in the 1950s, in two countries, Italy and Great Britain, had a particular response to modernity's second phase. Former members of the Independent Group in London, through the launch of radical exhibition installations and their cross-disciplinary artistic practices, manifested an interest in science, modern machines and hope for an improved future; while the architects, designers, visual artists and critics gathered in Milan, around the Triennale and *Domus*, through questioning industrial design as new artistic branch, were eager to propose an art of the future, available to a wider public thanks to its mass reproduction. Within the thesis, the experiences analysed in London have been seen as paradigmatic for popular culture, whereas the debates and the aesthetic problems raised in Milan, have been regarded as exemplary for high culture.

Banham, Hamilton, Henderson, McHale, Paolozzi and the Smithsons were, in fact, dealing with science and technology. They all had an optimistic vision of the future and all of them were attracted to several expressions of popular culture. In their works or theoretical speculations, industrial design objects, scientific discoveries and popular icons were presented or discussed as manifestations of modernity. In Italy, personalities with different background - Dorfles, Munari and Sottsass, involved in the Movimento d'Arte Concreta, and Jorn and Gallizio, founders of the International Movement for an Imaginist Bauhaus - were using, designing or questioning the role of industrial products, trying to include the new field in the existing visual arts framework. Through these case studies, this thesis has considered the 1950s, usually seen as transient decade between the war and the radical 1960s, as pivotal in the

development of Modernism as it was manifested in Italy and Great Britain.

Keeping in mind the United States' expanding post-war influence on Europe in several fields[389] and using two main points of observation, London and Milan, this study has aimed to map interests and attitudes, providing a new geography of cross-disciplinary artistic activities, including architecture, design theory, visual arts and other artistic practices. The inclusion in the thesis of these fields, diffused in the two countries considered, has showed that it was actually possible to respond differently to a certain stimulus, in the difficult years of the post war period, characterized by the desire for a normal life, following the anxiety of the war, the fear of the atomic bomb and the need of reconstruction. The group of people identified and discussed within this study, with their inclination to mass culture and to high culture, were used as case studies for their contrapositions, more then for their similarities. The outcome and the benefit derived from using two countries, Italy and Britain, as comparative studies, provided a complementary vision of the decade, which was made possible thanks to the two examples employed.

The post-war period was very complex and the ambiguities toward architecture, arts, science, technology and the future, with alternative feelings of hope and fear, emerged as emblematic among members of the Independent Group. As

[389] According to Beatriz Colomina, 1949 was the "'magic year' of modern architecture in the USA", in which the construction of Johnson's Glass House in Connecticut, of Mies's Farnsworth House in Illinois and of Eames House in California, gained the attention from Europe and from the rest of the world. See: B. Colomina, *Domesticity at War*, The MIT Press, Cambridge/London 2007, p. 24. Regarding the relationship between USA and Italy, see: P. Scrivano, *Building Transatlantic Italy. Architectural Dialogues with Postwar America*, Ashgate, Surrey 2013. This book also explains the role that institutional bodies as the United States Information Service (USIS) and the United States Information Agency (USIA), had in supporting US foreign cultural strategy during the years of cold war.

discussed in the thesis, Alloway was interested in American movie star icons, Banham was an enthusiastic admirer of American cars and Hamilton of modern machines. The appliances reproduces by Hamilton in his canvases - irons, televisions, toasters, radios, vacuum cleaners, etc - were the kind of desired objects, that the American "Family Utopia"[390] already dreamed of by the New York World's Fair in 1939 and felt they deserved at the ending of the war. At the same time, it should be noted that the consumer culture had different meanings in different countries. The United States used new products as symbols of the supremacy of a wealthy society,[391] while in several European countries, with the contraposition between the two blocks in the Cold War, the unconditional welcome of mass-produced goods was a delicate issue, as Banham became aware in the early 1960s.[392]

Among the Independent Group, a combination of admiration for up-to-date technologies and a fear of the nuclear age, was manifested, perhaps unconsciously, by Henderson, Paolozzi and Smithsons, with their aesthetic of "as Found" and their brutalist inclination. If their early collaboration for "Parallel of Art & Life" produced a collection of images from a worldwide heritage, their consecutive post-apocalyptic installation at "This is Tomorrow", might be seen as the peak of an instinctive response to the fears and the anxieties generated by Cold War. The Smithsons' later "House of the Future" project, presented at the Ideal Home exhibition, with its aesthetic of shelter, was a perfect balance between a homage to technology and the fear of the nuclear power. The House designed by the Smithsons

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[390] "Family Utopia", *Life*, November 25, 1946, pp. 58-59, quoted by B. Colomina, *Domesticity at War*, op. cit., p. 135.

[391] In this regard it was emblematic the debate between Nikita Khrushchev and Richard Nixon at the American National Exhibition in Moscow, in 1959. See: D. Crowley and J. Pavitt, "Introduction", in D. Crowley and J. Pavitt (edited by), *Cold War Modern Design 1948-1970*, exhibition catalogue, Victoria & Albert Museum, London 2008.

[392] R. Banham, "The Atavism of the Short-Distance Mini-Cyclist", in *Living Arts 3*, 1964, reprinted in *Design by Choice*, op. cit., pp. 84-89.

had several correspondences with architecture projects made in the United States in the same years. The Dymaxion Deployment Unit (DDU) designed by Fuller before the war, for instance, conceived as a mass-produced house unit, inspired by military culture, was close to a shelter prototype.[393] In the example of the Smithsons' "House of the Future", as throughout this thesis, considering parallel responses from the United States has helped to underline how the American shadow affected the European sensibility.

The content of this study and the subjects developed were conceived as a cultural analysis of intersecting experiences among the British Independent Group and the Italians involved at different levels in the discussions around industrial design. This analysis has been presented in three sections: in the first part the Independent Group's fascination with up-to-date culture, expressed by exhibitions organized in London during the 1950s; in the second part it has shown the embrace of cross-disciplinary activities, manifested by various personalities which were dealing with industrial design's practice in several ways; finally, in the third part the thesis has proposed an evaluation of the thinking of Reyner Banham and Gillo Dorfles as respectively representative examples of popular culture theory and of an establish historical approach, both applied to industrial design. With its three parts then, the thesis has mapped activities and interests and has build an interconnected geography, with the hope of providing a better understanding of the pluralists personalities analyzed. Although connections have been made throughout, different interests, attitudes, cross-disciplinary practices and perspectives, as responses to modernity have been key. The

[393] Regarding a military culture that affected architecture and design see B. Colomina, *Domesticity at War*, op. cit., pp. 21-56. In the book the author discusses the project by Fuller and a concept of house as shelter. See chapters "DDU at MoMA", pp. 61-81 and "The Lawn at War", pp. 111- 143.

differences, perhaps most evident in the comparison of Banham and Dorfles, are crucial in the light of the aforementioned developments in the 1960s.

Regarding the practice among these groups, the research has underlined the general attitude that the Independent Group had toward mass-produced objects and the role that progressively industrial products achieved at the Triennale in Milan, where they were evaluated more for their aesthetic qualities, rather than for their iconic values. As already stated, on a theoretical level, a contraposition has been pulled together in the last section by presenting the thinking of Banham and Dorfles. The novelty in the thoughtfully provocative approach expressed by Banham, was the way in which he questioned the aesthetic models used in the assessment of industrial design, seen by him as a counter-discipline. A similar perspective was applied to movie stars and to icons of modern society by the French Roland Barthes, in his collection of essays published in 1957.[394] Nevertheless, the book written by Barthes was more a compendium of modern myths embraced by contemporary society, rather than an aesthetic theory on mass production, as it was advocated by Banham in his articles. A few years after the publication of *Mythologies*, Umberto Eco (b. 1932), with his "Apocalittici e integrati" ("Apocalyptic and Integrated Intellectuals"),[395] introduced to Italy a discussion on mass culture, through the analysis on popular novels, comics' characters, TV programs and movie stars. However, again differently to Banham, the perspective used by Eco was more sociological than aesthetical.[396]

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[394] R. Barthes, *Mythologies*, op. cit.

[395] U. Eco, *Apocalittici e integrati*, Bompiani, Milano 1964. Some of its essays were translated in English and published in: U. Eco, *Apocalypse Postponed*, ed. by R. Lumley, Indiana University Press, Bloomington 2000.

[396] In *La struttura assente. La ricerca semiotica e il metodo strutturale* (Bompiani, Milan 1968) Eco used a semiotic approach to architecture, visual

On a quite dissimilar level there was Dorfles, who was more concerned to fit industrial design inside a critical framework and to provide a guide to other scholars and designers. His intervention was fundamental because he created a space for clarify what design was and which theories to use in order to analyse the new field. His "Introduzione" was written with the established culture, the interaction with other fields and the current theories on semiotics in mind.[397] Dorfles undoubtedly admired Banham, probably for his unconventional attitude, but he shared with the board of the magazine *Domus* and with the organisers of the Triennale the same philosophical concerns about industrial design. Then, as reported in the last chapter, with its work on bad taste published at the end of 1960s, the Italian critic started to apply social and cultural studies to mass objects and collective phenomenon.[398]

As mentioned, in the thesis the notion of "culture" has been connected with two different adjectives: "popular" for Great Britain and "high" for Italy, as they seemed to emerge in the 1950s.[399] The two adjectives associated to the personalities analysed in this study, should be seen, in Britain as in Italy, under the light of the post-war situation, with pluralistic

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arts and cinema, with an attitude that still be different from the one employed by Banham.

[397] In his articles written for *Domus* over the 1950s, Dorfles connected semiotic to architecture and design, under the spell of what ULM proposed, especially under the direction of Tomas Maldonado. See G. Dorfles: Architettura e semantica, in Domus, No. 306, May 1955, p. 40; Architettura e Psicologia, in Domus, No. 329, April 1957, p. 23; Valori semantici..., in Domus, No. 360, November 1959, pp. 33-34.

[398] G. Dorfles. *Kitsch. An Anthology of Bad Taste*, op. cit.

[399] By looking at the writings written by Banham and by considering the attention that popular icons had between the 1950s and the 1960s as in the examples provided - Barthes and Eco - it might be more appropriate to talk about "cultural transformations". However, the expression could lead someone to consider the so-called "high culture" as old fashioned because typical of the establishment and "popular culture" as a new attitude promoted by younger generation of scholars, which could flow into a counter-culture. The debate about the opportunity of employing one or more cultures, is recalled by Robert Lumley, 'Introduction' in *Apocalypse Postponed* op. cit. p. 1 and p. 12, note 3.

responses, pushed by circumstances that are not difficult to explain. Italy wanted to be modern and rehabilitated after Mussolini and fascism; one way for doing so was to be on the frontline in international debates on city planning and industrial production, an expression of wealth. In 1949 in Bergamo hosted the VII edition of the Congrès Internationaux d'Architecture Moderne, CIAM,[400] very much an expression of a "high culture", against which the Smithsons' and other architects opposed their radical conceptions toward the founding of "Team 10". Two years later, in 1951, for the IX Triennale the symposium on "Divina Proporzione" gathered in Milan an extraordinary group of personalities as Ackerman, Giedion, Le Corbusier, Wittkower and several others, with the aim of considering man as central in design practice. If the congress in Bergamo shone new light on Italy, it was the Triennale in Milan that gave modern architecture and creative design the space deserved.

It is possible to argue that, in the post-war period, high culture was as necessary in Milan as pop culture was essential for the Independent Group. While Banham was a "Betty Boo fan", Dorfles, as admitted by himself, was willing to take part at an international community that would emancipate Italy.[401] In the end, the emancipation had different outcomes. Italian architects and designers achieved this goal when in the 1960s

[400] E. Mumford, "The CIAM Discourse on Urbanism, 1928-1960", MIT Press, Cambridge Mass. 2000; D. Crowley, "Europe Reconstructed, Europe Divided", in D. Crowley and J. Pavitt, *Cold War Modern Design 1948-1970*, op. cit., pp. 42-63.

[401] As stated by Dorfles, during an interview made in 2011: "The 1950's were a period after the war which brought great recovery to Europe. Italy in particular recovered with novelty in literature, arts and architecture. Milan was the most important centre in Italy, not only for its cultural recovery but for its geographic position. Milan maintained a relationship with Zurich and Lugano (not just for touristic reasons) but also for meeting architects and artists. Relationships with Paris, Les Realité Nouvelle and concreto e astratto, concretion et abstraction, no better abstraction and concrete were also important. There were also relationships with Germany and with the Bauhaus. After the war we needed to renovate all these relationships, and by founding the MAC we wanted to be at the same level with the rest of Europe".

they became well known worldwide. The group that animated the ICA in London, created an alternative to the established culture that has been fully recognised in recent decades. By taking into consideration this contraposition, it is possible to understand the desire to renovate architecture practice, raised for instance by the Smithsons and, on the other hand, the desire to be part at the CIAM, manifested by several of the Triennale's organisers.

It should be noted that the British artists addressed in this research mainly came from working class and lower middle-class families. Their fascination with American culture, comics, science fiction, and so forth is representative of a generation of artists and scholars that saw in the popular American culture and in its society new perspectives for a brighter future.[402] This is why under the light of popular culture it was easier to understand the reasons of a fascination for science, science fiction, technology and future, manifested by the Independent Group. Together with the attraction of these subjects, there was a consequent inclusion of industrial objects in visual art works and speculations, as manifestation of modernity. The personalities who gathered at the ICA, with their exhibition practices and other activities, were instinctively, and maybe subconsciously, reacting to the established culture of the London museums. At the same time, not everyone in London shared with them the same fascination for objects and science and, as discussed within the thesis, not everyone was ready to accept radical exhibitions settings or untraditional aesthetic perspective.

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[402] D. Kirkpatrick, "The Artists of the IG: Backgrounds and Continuities", in D. Robbins, *The Independent Group: Postwar Britain and the Aesthetic of Plenty*, op. cit., pp. 207-211.

The backgrounds of the personalities analysed from the Italian side were very different. Dorfles was trained as a psychiatrist, Gallizio held a degree in Chemistry and Pharmacy, Sottsass in architecture and the self-taught Munari was close to the intellectual board of *Domus* and *Casabella*. The American influence was quite important for them, but not as a source of popular culture but as a model for a contemporary society.[403] With the exclusion of Gallizio, Dorfles, Munari and Sottsass were based in Milan, which, with the Triennale and its magazines was an exceptional place in the Italian post-war period. These exhibitions and publications affected taste amongst the middle and upper classes. If, as stated by Sottsass in 1947, art and craft only have a value to those who "consider Louis XVI furniture beautiful by definition and consider an airplane propeller by definition unrelated to beauty",[404] a decade later, society radically changed its taste and started to have interiors in Ponti style, pieces of furniture made by Kartell, and to appreciate machine-made objects.[405]

Despite the effort of having educated discussions on city planning, the Renaissance, aesthetics and design, the citizens in Milan were not all part of an intellectual elite, concerned with the golden ratio. The other face of the city, emerged from the books written by the novelist Giovanni Testori (1923-1993), who described the suburban areas around Milan, characterized by poverty, prostitution and miserable living conditions.[406] If in Milan these conditions were more concentrated in the suburbs, in the southern part of Italy, the situation was much worse. The

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[403] P. Sparke, The Influence of the USA, in *Italian Design, 1870 to the Present*, Thames and Hudson, London 1988, pp. 81-83.

[404] The article was published in the *Politecnico*, in November 1947, recalled by M. Vitta, "Dalla guerra al miracolo economico", in *Il progetto della bellezza. Il design tra arte e tecnica, 1851-2001*, op. cit., pp. 217-255 ["considera bello per definizione un mobile Luigi XVI, e per definizione considera estranea alla bellezza un'elica di un aeroplano", p. 229, translation Claudia Marfella].

[405] Ibid., p. 255.

[406] G. Testori: *Il Dio di Roserio*, 1954; *Il ponte della Ghisolfa*, 1958; *La Gilda dim ac Mahon*, 1959. All published by Feltrinelli, Milan.

emblematic case was the city of Matera, that became object of studies and attracted an international concern, for its rural state of life, with 15,000 people in primitive houses that are still well known as "Sassi".[407]

By taking inspiration by the use of two phases of the Machine Age, emphatically adopted by Banham, a further aspect that the thesis has underlined has been a correspondence between the first phase of modernity, raised in the early decades of the nineteenth century and the second phase, which emerged after the war. The notion of modern society, the faith in science and the desire to live surrounded by modern machines, were all aspects that characterized the 1950s and that mirrored the same attitude manifested by the pre-war society. Between the period examined with this study - 1948, the year of the founding of the Institute of Contemporary Arts, and 1963, the year of the publication of Dorfles's "Introduzione al disegno industriale" - as Europe recovered from the war, interest in technology and science, and an optimistic vision of the future peaked as they had done at the start of the twentieth century, inspiring visual artists, architects, designers, photographers and scholars and prompting theoretical speculation. While the particularity of art's relationships with industrial design, science and popular culture in this decade has been stressed, the importance of this decade is justified by the connections these relationships have with those earlier and later in the century.

Regarding visual arts, a link between the two periods has been underlined since the 1960s, with the so-called "two avant-gardes", an expression coined by the Italian scholar Maurizio

[407] The case is recalled by P. Scrivano, in *Building Transatlantic Italy*, cit., pp. 54-55. The state of Matera and its region became internationally known thanks to Carlo Levi in his famous *Cristo si è fermato a Eboli* (Einaudi, Turin 1945) translated in several languages [*Christ Stopped at Eboli*, Ferrar, Straus and Company, New York 1947].

Calvesi, who noticed a correspondence between the avant-garde movements at the beginning of the new century and the radical experiences of New Dada and Pop Art.[408] Although, instead of finding associations between personalities alive in these two phases, the thesis has underlined the recurrence of interests in science, machine, future, cross-disciplinary activities and industrial design products, in common between the generations of architects, artists, critics, designers and photographers of the two phases of modernism. The interest for X-Ray shared by Nigel Henderson and Moholy-Nagy, or a comparison between the fascination for ethnographic and science museums, both provided in the first chapter, are examples of equivalences between the first and the second phase of modernism. After all, it was not by chance that the popularity of the Bauhaus's designed products, Le Corbusier's concept of "machines for living in", and the Futurists' love of progress and technology soared in the 1950s. The post-war generation had the same unconditional faith in a technological future that was alive at the beginning of the century and it was for this reason that considered the old master as model to look at. In fact, industrial design, which has been one of the main subjects of discussion within the thesis, because the attention received in the 1950s, became important with the Bauhaus, since the mid-1920s. Moreover, the society that was coming from the ordeal of the war, amplified the desire for a radiant tomorrow. As Mary Banham put it, "Tomorrow had to be 'new and improved'"[409] and as stressed within the thesis, in the 1950s, this really appeared to be the case, with the rise of fashionable futuristic cars and technologically-advanced houses, which found themselves in the exhibitions and articles of the period due to the interests of both artists and critics.

[408] M. Calvesi, *Le due avanguardie. Dal Futurismo alla Pop Art*, op. cit.
[409] M. Banham, "Retrospective statements", in D. Robbins, op. cit., p. 188.

The outcome of the thesis could be to open up a wider discussion on the 1950s, with multiple perspectives and with the inclusion of more personalities from other European countries. By using different angles, other scholars might add further pieces to this study. The inclusion in a wider discussion, of other groups inspired by the Atomic age, as, for instance, the Nucleari in Milan might add a further insight; or the critique to contemporary society moved by the International Movement for an Imaginist Bauhaus and by the Situationist International, might be linked more with the optimistic faith in the future, showed by both the British and the Italian personalities analysed. Another area to investigate might be the attraction for cybernetic, mentioned in the thesis, that started in the 1950s and diffused in the 1960s, in Britain, Italy and in other European countries. By creating a bridge between these early experiences and the once that came later, further studies might provide an appropriate justification to some visual aspects of the two decades. In addition, using multiple perspectives, as the thesis has done, seems to be particularly appropriate to evaluate the Independent Group that for the variety of its interest and the heterogeneous personalities that were part of it, escaped from a traditional investigation and seems to be "a cultural research group".[410] Thanks to the cases provided, the thesis has explained the second phase of modernity by considering as paradigmatic examples the people discussed, based in London and Milan.

The thesis has evaluated these responses - the faith in a modern society (as for the Independent Group), a concern for industrial design as art of the future (around *Domus* and the Triennale), a critique to the establishment (as for Jorn) - and has provided interconnections or tangential connections, by

[410] B. Highmore, "Brutalist Wallpaper and the Independent Group", op. cit., p. 205.

looking at selected people and by presenting their reactions. Finally, the 1950s were seen as responsible of what happened in the following decade, the 1960s, with Italy that undergone its primacy in industrial design products, while Britain became well known worldwide for its popular culture. Therefore, expressions of late Modernism in Great Britain and in Italy during the 1950s were seen as seminal examples of a situation that would respectively give rise to the Swinging Sixties[411] and the Economic Miracle. These outcomes were nourished by different development stages that characterized the two countries. Britain was the nation from which started the industrial revolution and while in the aftermath its heavy industry had a relative decline, after the ending of the food ration in 1954, Britons embraced the path of consumer capitalism. Between 1947 and 1951, if the licences for radios increased relatively, the licences issued for televisions, moved from 15,000 units to 1,449,000 units, a fact that likely explains why TV sets became so popular in Hamilton artworks.[412] Interestingly, a movie as "Blow Up" directed in 1966 by the Italian Michelangelo Antonioni (1912-2007),[413] was able to catch the changing conditions in London, full of hedonism, optimism and self-indulgence. After the American influence, it was the time of the "British Invasion" of the States, with fashions, trends and a successful rock and pop music by The Beatles, The Rolling Stones, The Who and several others groups.[414] The leading British phenomenon in the 1960s was,

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411 The expression was used for the first time in *Time Magazine*, Vol. 87, No. 15, 15 April 1966.

412 P. Hennessy, "Having it So Good. Britain in the Fifties", Penguin, London 2006, p. 112.

413 The movie was inspired by a short tale, "The Droolings of the Devil", written by Julio Cortázar (1914-1984) and included in "The Secret Weapons" ("Las babas del diablo", collected in "Las armas secretas", Editorial Sudamericana, Buenos Aires 1959). Blow-Up was awarded with the Palme d'Or at the Festival International du Film de Cannes in 1967.

414 B. Harry, *The British Invasion. How the Beatles and Other UK Bands Conquered America*, Chrome Dreams, London 2004; M. Barry, *The British Invasion. The Music, the Times, the Era*, Sterling Publishing, New York, 2009.

in fact, popular culture, with its predominance on pop music and on fashion creativity.[415]

The "aesthetic of plenty" had produced a celebration of technology from the British side with the primacy in popular culture and the production of design objects from the Italian side, recognised worldwide. In Italy, the symbols of the economic miracle were the city cars Fiat 600 and 500,[416] and the television and the refrigerator that, since the ending of the war, became progressively common in Italian homes. The vision of Italy as a traditional country, the land of ceramics and handcrafted objects, declined.[417] Meanwhile the desire for a luxurious lifestyle was expressed by the movie "La Dolce Vita", made in 1960, right at the opening of the new decade. In the end, if there was an "Italian invasion" abroad, it was characterized not with expression of popular culture, but with industrial design, the equivalent of quality and style, labelled with "made in Italy", a mark which was becoming eponymous with excellent products. Dorfles, after the publication of his "Introduzione", would continue his prolific career as a scholar, writer and as a professor of aesthetics in several Italian universities. Munari would carry on with the writing of books for children,[418] with the project of visual communication works and with the design of uncommon objects. Sottsass would be recognised worldwide as one of the most influential designers and in 1968 would receive an honorary doctorate from the Royal College of Art, in London. The founding of Archizoom Associati, as mentioned at the end of this thesis's final chapter, mirrored Britain's Archigram, in the creation of a new avant-garde, but one necessarily indebted to the 1950s.

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[415] C. Breward and G. Wood (eds), op. cit.

[416] The Fiat 600 was produced from 1955 to 1969, the Fiat Nuova 500 from 1957.

[417] D. Forgacs and R. Lumley, op. cit.; R. Lumley, op. cit.

[418] The series of "Libri illeggibili", started in 1949, would go on until 1995.

The end of the story described by the thesis is in reality the starting point for other stories, which would cross almost the entire second half of the twentieth century. While the 1960s, in Europe as in the United States, would be inspired or affected by other factors, including the persistence of the Cold War, the student movements and the Vietnam War, in several cases, industrial design, science and popular culture would still inspire artists, architects, designers and scholars. The first man in space in 1961 and the moon landing in 1969 provided new stimulus to the popular interest in theories of the universe, and in unknown planets and galaxies. The American documentary short film, "Power of Ten", written and directed in 1968 by Charles and Ray Eames, and re-released in 1977, was likely nourished by that context.[419] Following a logarithmic scale and order of magnitude, the film divided the relative scale of universe by a factor of ten. It starts with a picnic by the lakeside in Chicago and every ten seconds show the starting point from ten times farther out until our galaxy. Then it returns to earth and moves inward into the hand of the sleeping picnicker. The journey ends in a white blood cell, inside a DNA molecule,[420] that, as seen in the thesis, already gave in the 1950s new stimulus to designers, thanks to the discovery of its structure. A year before the film realised by the Eames, a journey into the immensely tiny was also taken by the visitors of the "Adventure Thru Inner Space", at Disneyland's Tomorrowland, a successful

[419] The film was inspired by "Cosmic View: The Universe in 40 Jumps", "Cosmic View" (John Day Company, New York 1957), written by the Dutch educator Kees Boeke (1884-1966), who tried to renovate education by designing schools as workshops. In his essay Boeke explored size and structure from the astronomically vast to the atomically tiny, by using a combination of writings and graphics.

[420] Previous films by Ray and Charles Eames ("Chairs", "Black Top", "IBM", "Toy Fair" and "Day of the Dead"), were screened in 1958 at the Institute of Contemporary Arts. See: *ICA Bulletin*, July 1958, n. 89.

attraction opened in 1967 and inspired by the television show episode "Our Friend The Atom".[421]

In Britain, the place left by the Independent Group would be occupied by the avant-garde Archigram, who presented the exhibition "Living Cities", at the ICA in 1963, with the support of Theo Crosby.[422] Former members of the Independent Group, would take their own paths. Alloway, Banham and McHale all moved to the United States, in 1961, in 1976 and in 1962 respectively. Alloway became an influential critic and writer, associated with abstract expressionism, minimalism and, of course, Pop Art. Banham became a professor of architectural history, first at Buffalo and later at Santa Cruz, while McHale became Director of the Center for Integrative Studies at the School of Advanced Technology (State University of New York). Banham recalled the years spent at the Institute of Contemporary Arts and his involvement with the Independent Group in "The Fathers of Pop" (1979),[423] documentary film in which he engaged conversations with Alloway, del Renzio, Hamilton and Henderson. The film represented the summary of all the suggestions and sources of stimulation used by the group during its early meetings and in part presented in this study.

The comparisons between the cross-disciplinary experiences of two groups of people with different aims at the ICA in London

[421] The project came from "Our Friend the Atom" (Simon & Schuster, New York 1956), a book written by Heinz Haber (1913-1990), which explained how atomic science began. The book inspired also the Walt Disney episode with the same name.

[422] "Living City" was organized and designed by the young members of Archigram: Warren Chalk (1927-1987), Peter Cook (b. 1936), Dennis Crompton, Ben Fett, Ron Herron (1930-1994), David Geene, Peter Taylor and Michael Webb (b. 1937). See: S. Sadler, *Archigram: architecture without architecture*, MIT Press, Cambridge; London, 2005.

[423] The film was directed and produced by Julian Cooper (b. 1945), with the participation of Frank (1918-1980) and Magda Cordell (1921-2008), Dorothy Morland (1906-1999) and Richard Smith.

and at the Triennale in Milan presented in this thesis have demonstrated that cross-cultural analysis can produce informative reflections not only on the connections between the countries addressed, but how their differences inform our understanding of each country's activities. This thesis has focussed on Milan and London over a fifteen-year period, but it is hoped that this study will stimulate further studies in this field, particularly in Italy where, as discussed in the introduction, this approach is relatively new.

Illustrations

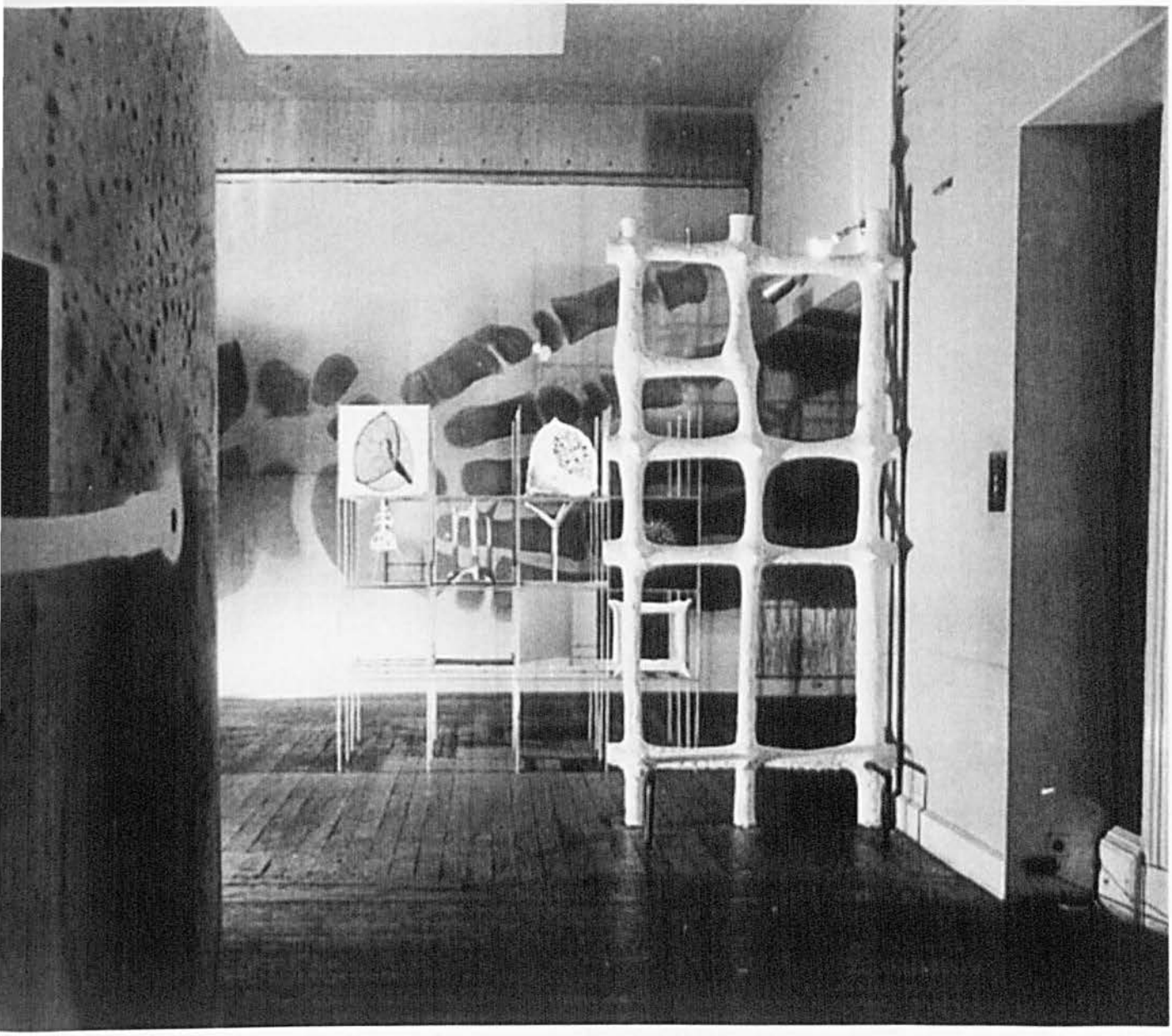


Fig. 1, "Growth and Form", installation view, Institute of Contemporary Arts, London 1951.

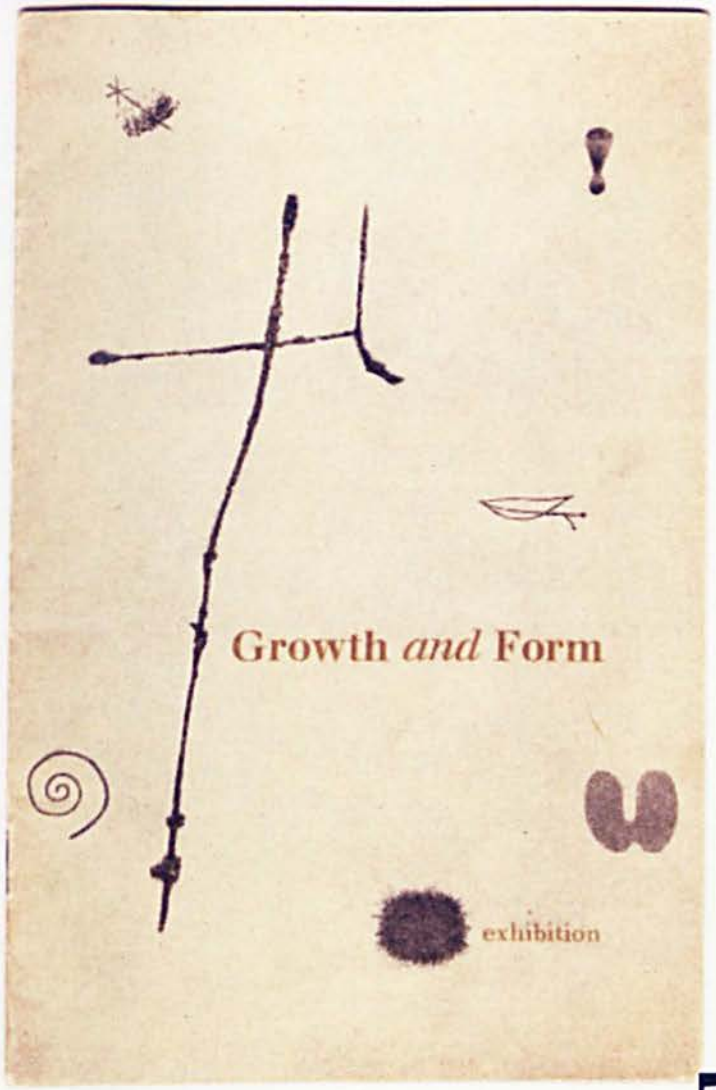


Fig. 2, Exhibition catalogue for "Growth and Form".

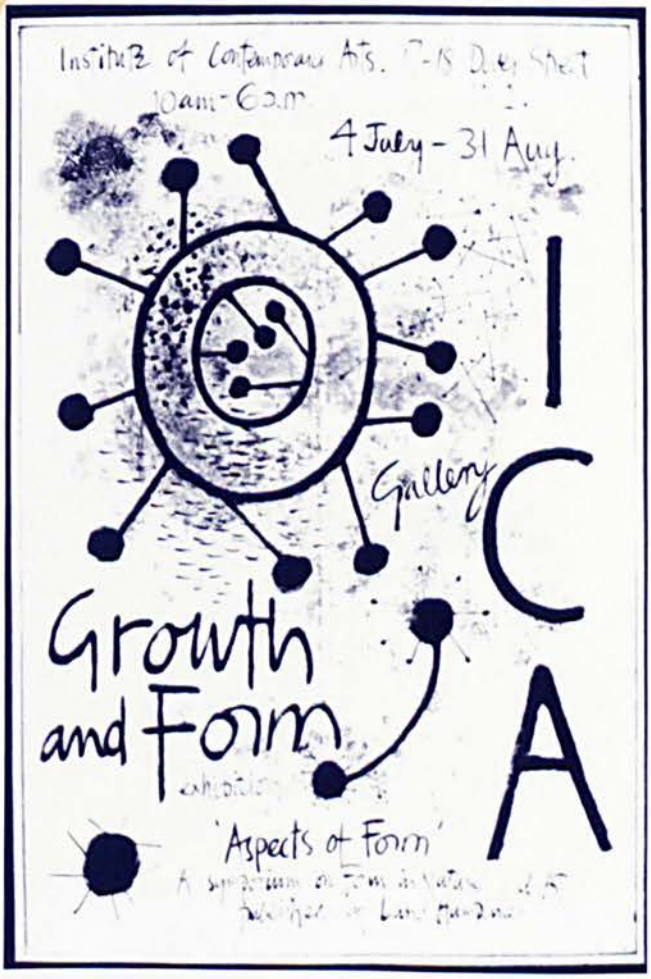


Fig. 3, W. Turnbull, poster for "Growth and Form".

Fig. 4, R. Hamilton, "Heteromorphism", engraving and acquatint on paper, 1951, Tate collection, London.

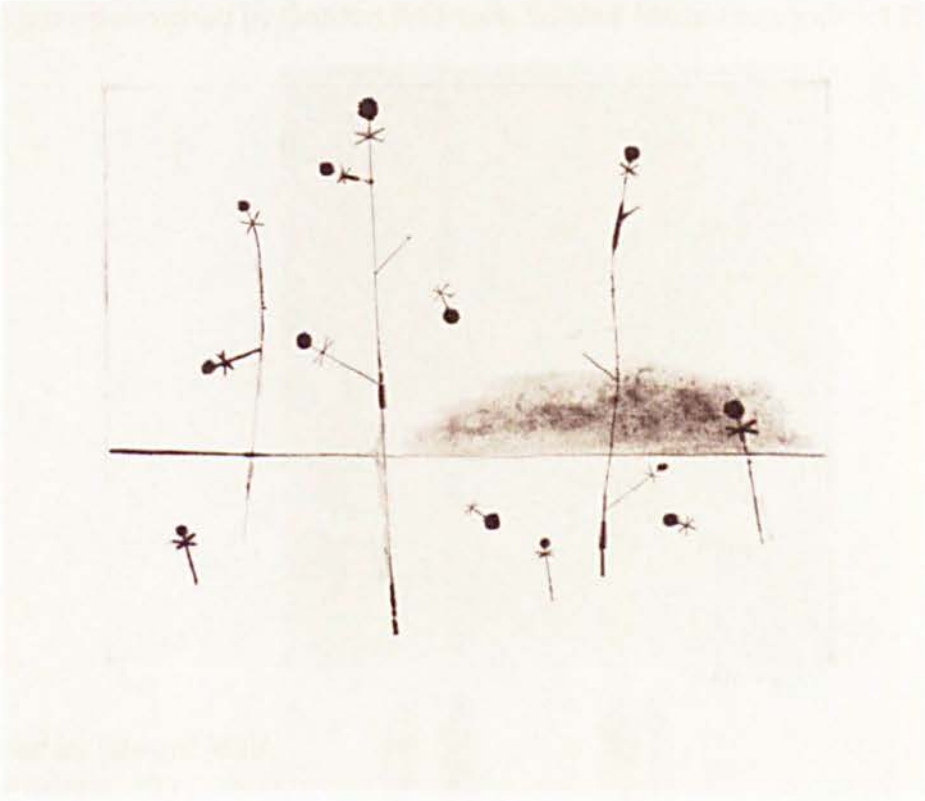


Fig. 5, R. Hamilton, "Microcosmos: plant cycle", engraving and acquatint on paper, 1950, Tate collection, London.

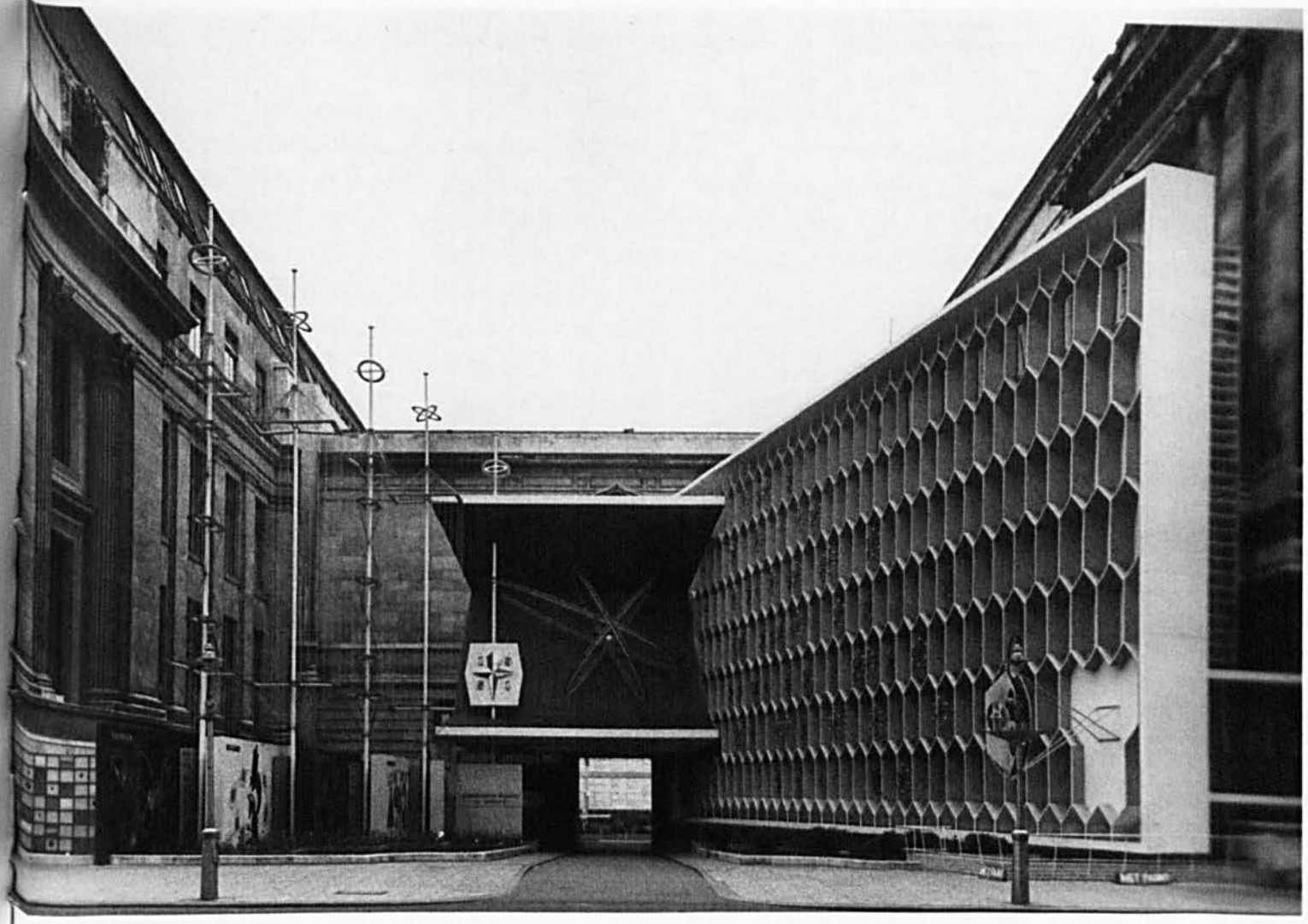


Fig. 6, "Exhibition of Science", entrance screen designed by Gordon Andrews, Science Museum, London 1951.

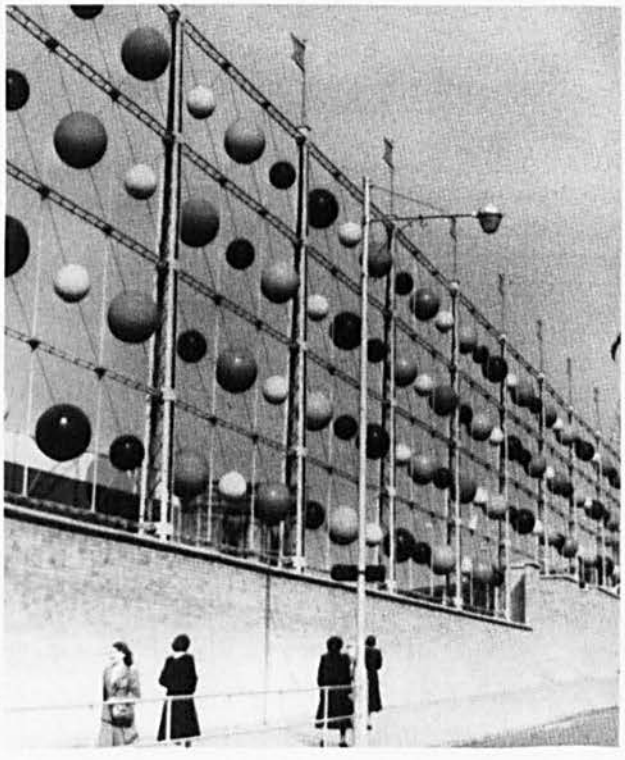
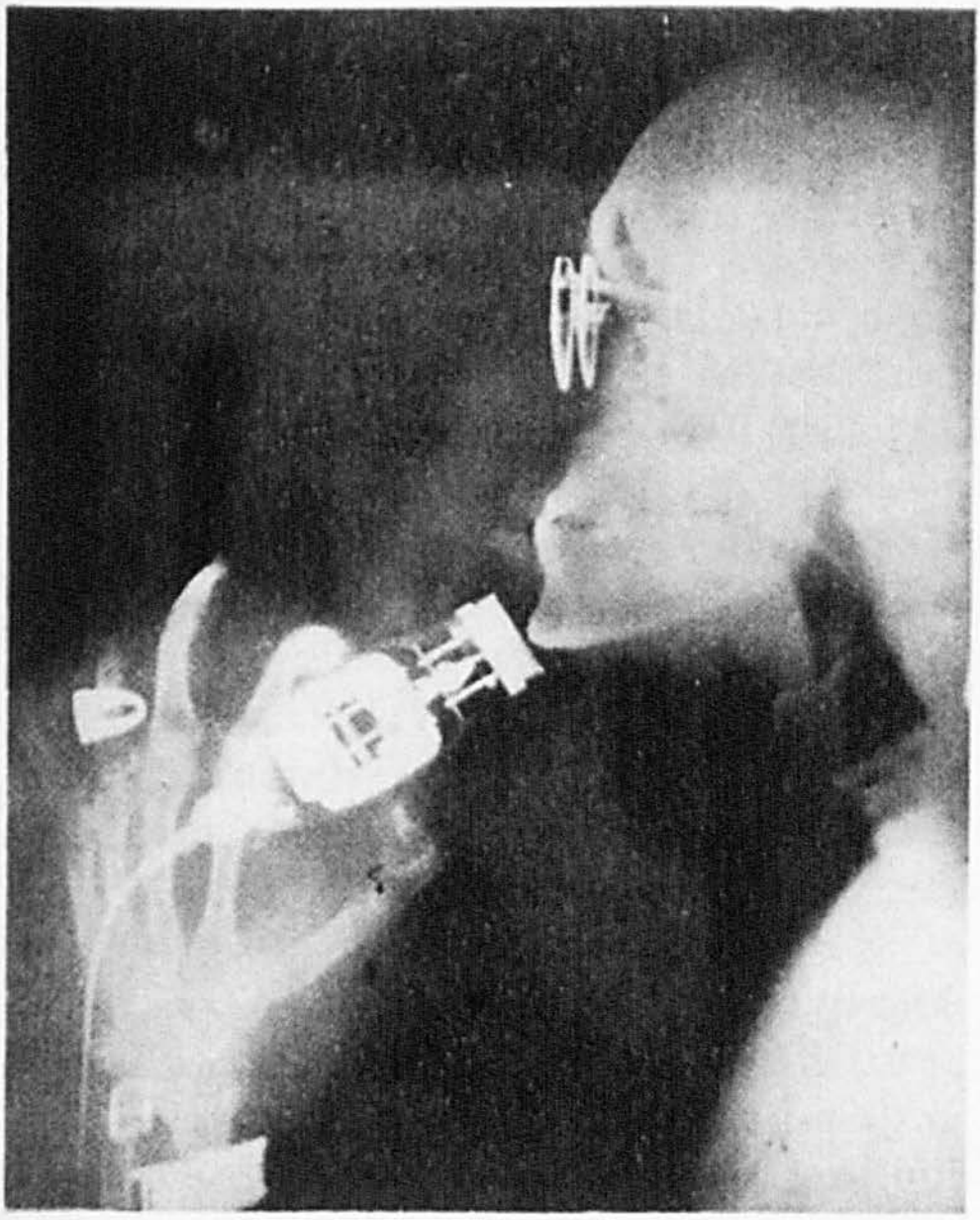


Fig. 7, Decorative screen designed by Edward Mills, Waterloo Road, Festival of Britain, 1951.

Fig. 8 "Exhibition of Science", Science Museum. Wallpaper by John Line used as backdrop to the display with afwillite 8.45; ball lights designed by Brian Peake, based on the atomic structure of carbon.

Fig. 9/10, Evening dress and detail of the pattern made of Beryl 8.9 lace.
The dress was worn by Lady Alice Bragg, wife of the physician Lawrence Bragg.



CATALOGUE OF THE EXHIBITION

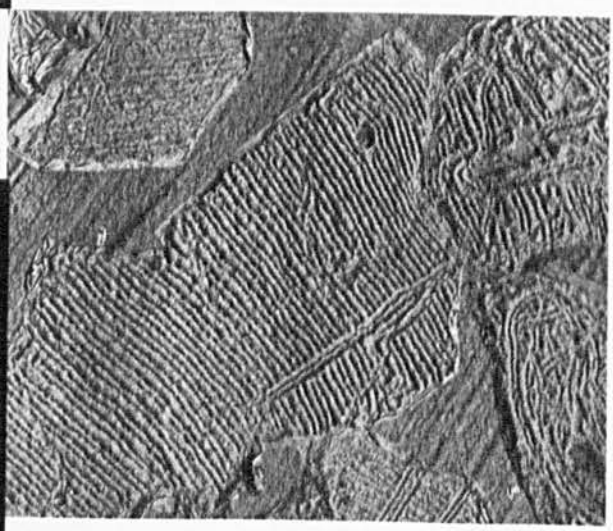
Parallel of Life and Art

Held at the Institute of Contemporary Arts

September 11th to October 18th, 1953.

Fig. 11, Exhibition catalogue for "Parallel of Life and Art", Institute of Contemporary Arts, London 1953.

Fig. 12, "Parallel of Life and Art", installation view.



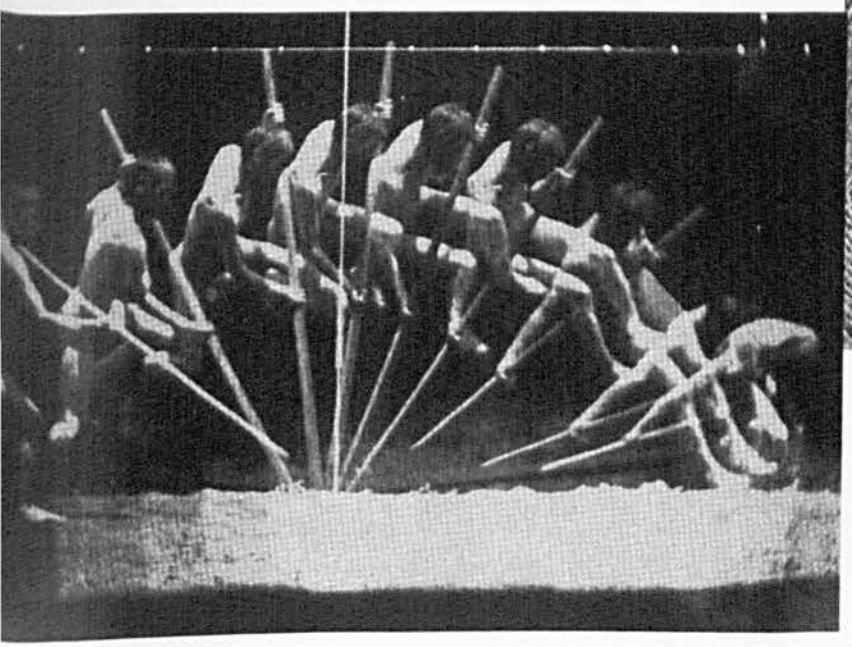


Fig. 13/14/15, from the right above: J. Breitenbach, Pattern of coffee bean fragrance, 1940; T. Eakins, Action photo, 1881-1884; R. Samuel, Aereal view, 1944. All reproduced in L. Moholy-Nagy, "Vision in Motion".

Fig. 16, André Malraux in his flat in Paris, photograph by Maurice Jarnoux for "Paris Match", 1953.

Fig. 17, "Parallel of Life and Art", installation view.

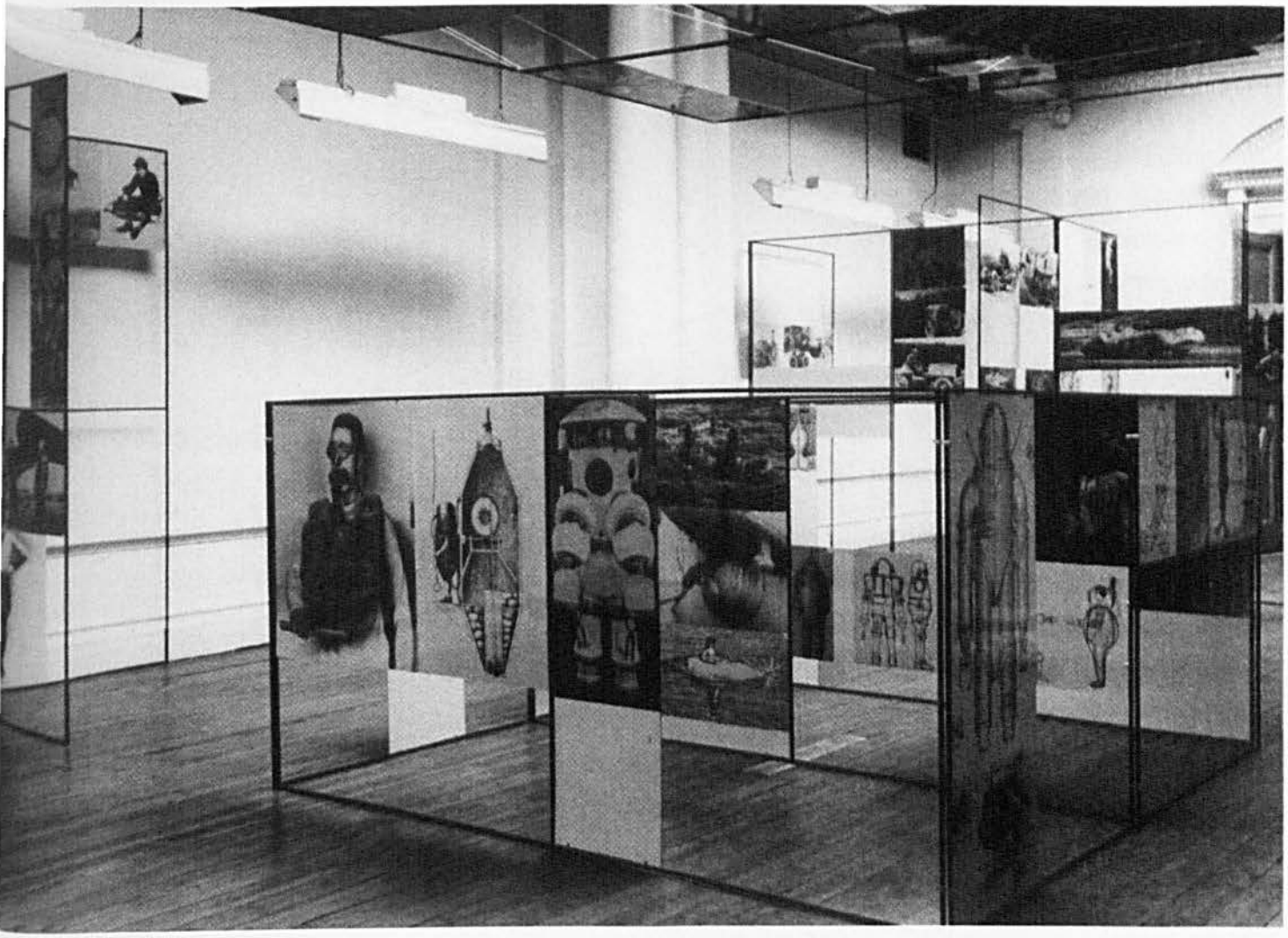


Fig. 18, "Man, Machine and Motion", installation view, Hatton Gallery, Newcastle upon Tyne 1955.

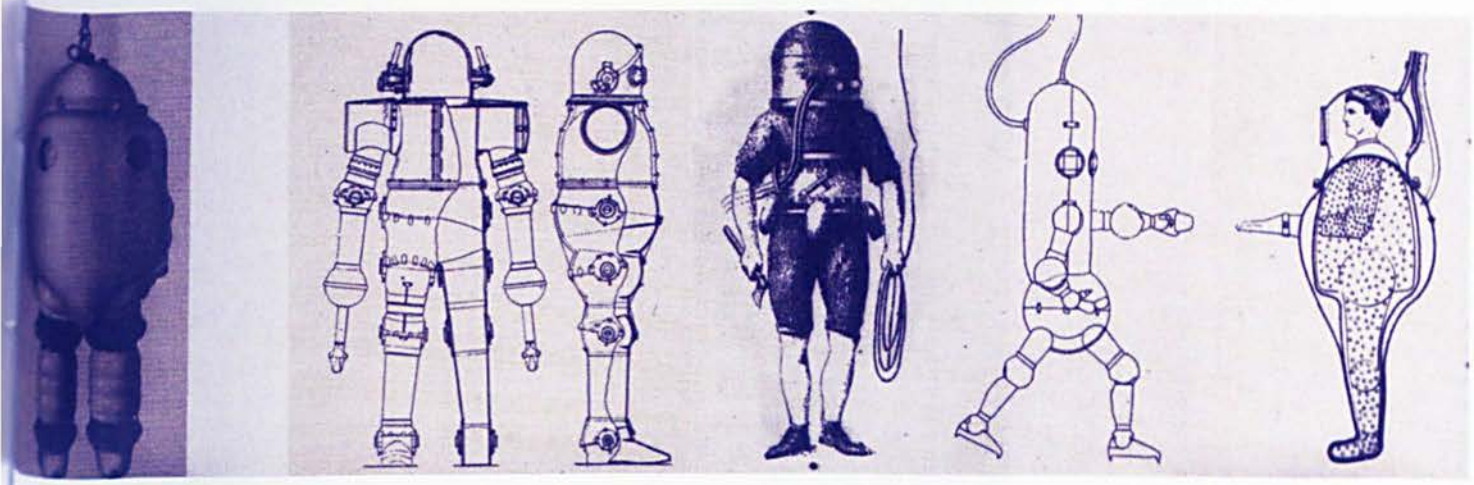


Fig. 19, Panel from "Man, Machine and Motion", recto.

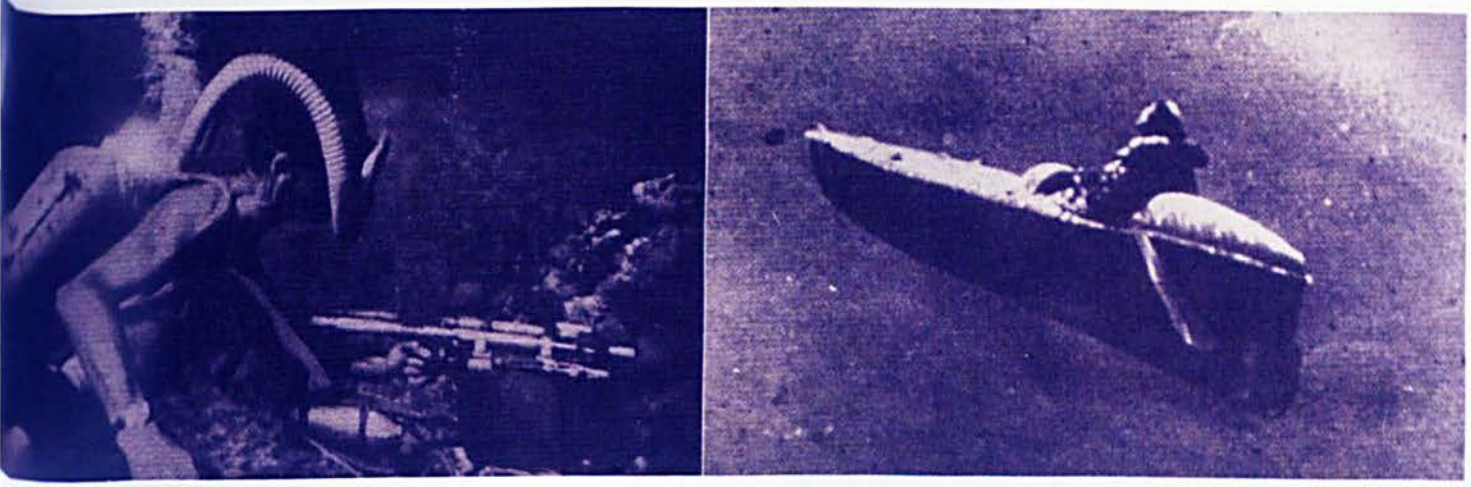


Fig. 20, Panel from "Man, Machine and Motion", verso.

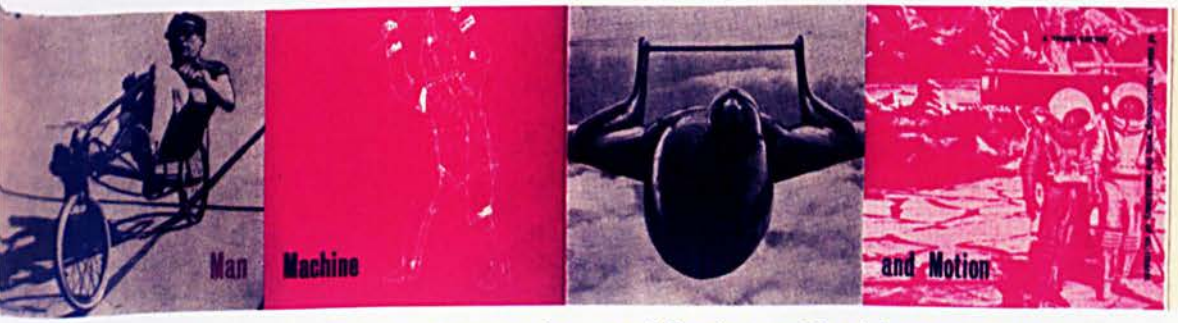


Fig. 21, Private view card for "Man, Machine and Motion".

Fig. 22, Le Corbusier along with Le Modulor's panel exhibited at "Mostra di Studi sulle proporzioni", IX Triennale, Milan 1951.

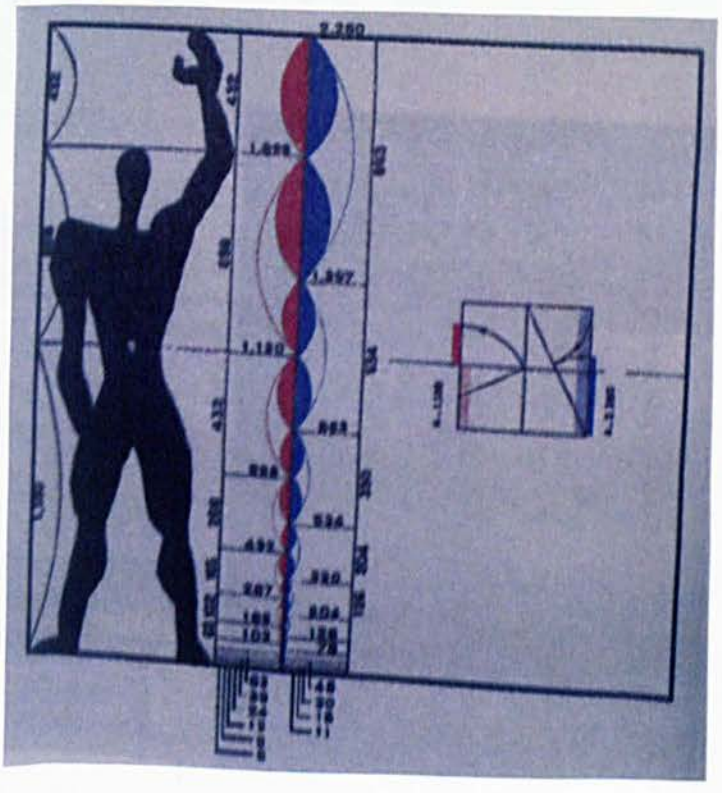


Fig. 23, Le Corbusier, scheme of Le Modulor.

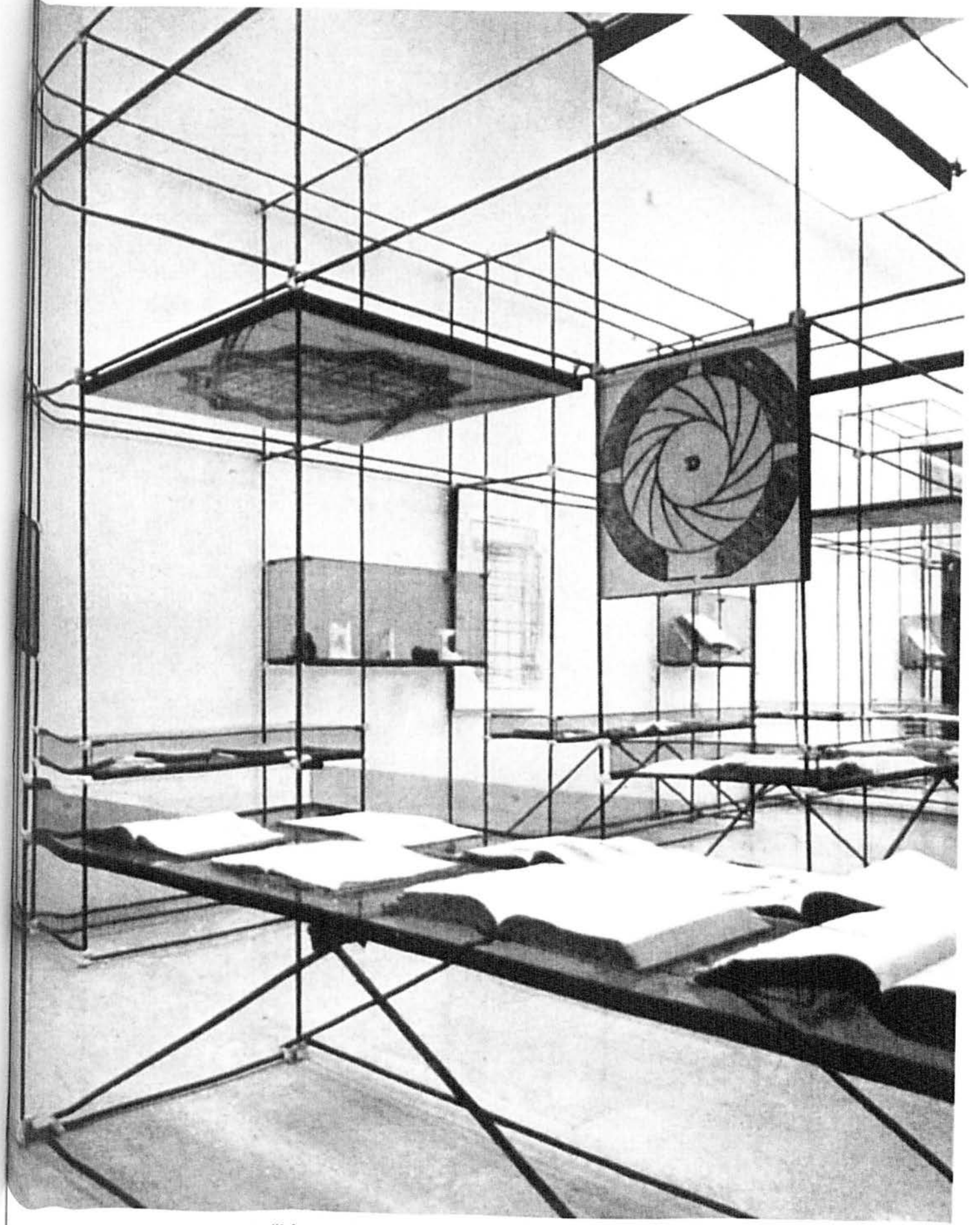


Fig. 24, "Mostra di Studi sulle proporzioni", installation view.

Fig. 25, Poster for "Riders to the Stars", 1954.

Fig. 26, William Lundigam (Dr. Richard Stanton) in "Riders to the Stars".

Fig. 27, Poster for "Creature from the Black Lagoon", 1954.

Fig. 28, The creature and Julia Adams (Kay Lawrence) in "Creature from the Black Lagoon", 1954.

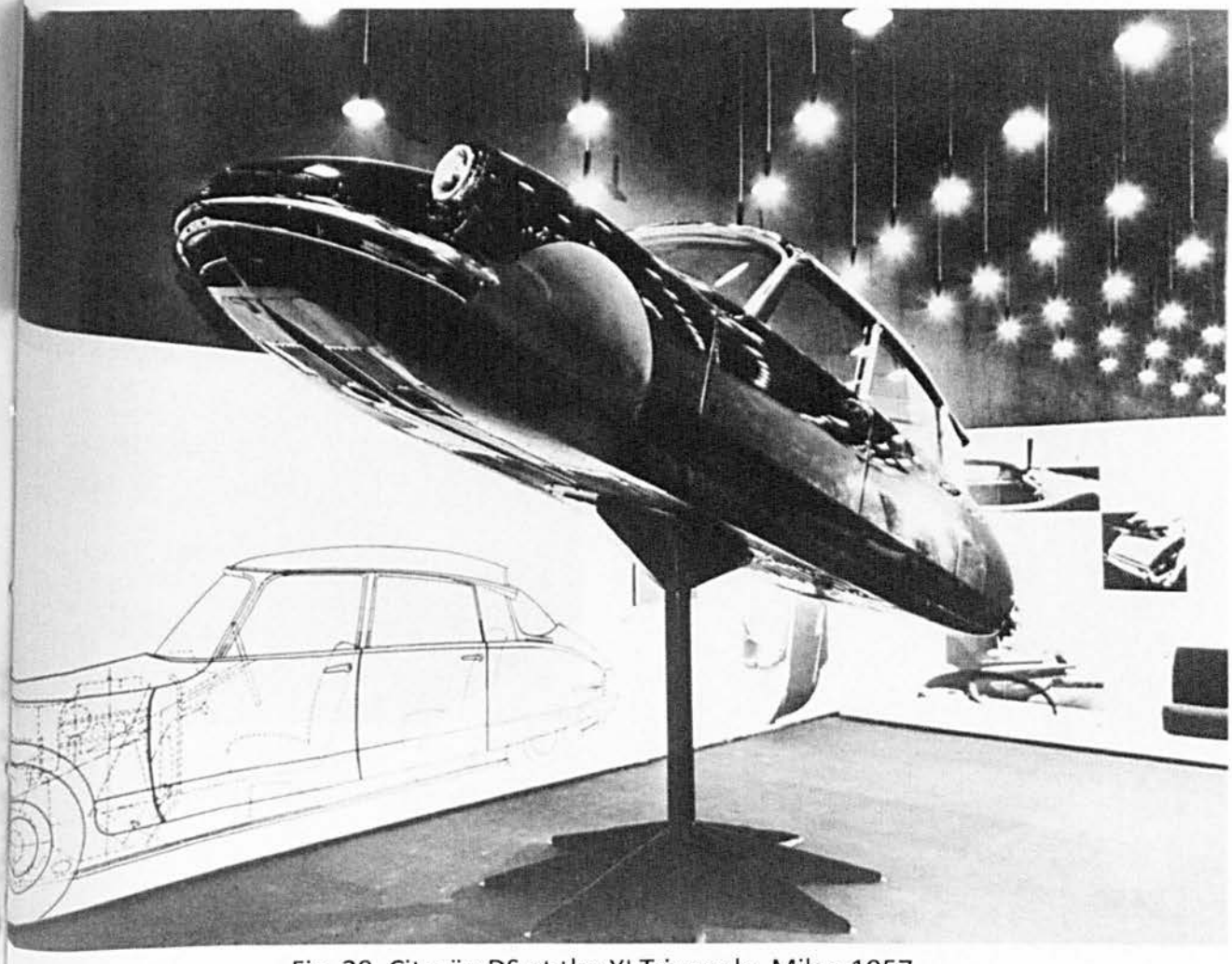


Fig. 29, Citroën DS at the XI Triennale, Milan 1957,
© Archivio Storico La Triennale di Milano

Fig. 30, Terry Hamilton in the *Gallery for a Collector of Brutalist and Tachiste Art* at the *Daily Mail's ideal Home Exhibition*, 1958 © Richard Hamilton.

Fig. 31, The Smithsons' Citroën DS in front of Upper Lawn Pavilion, 1961.

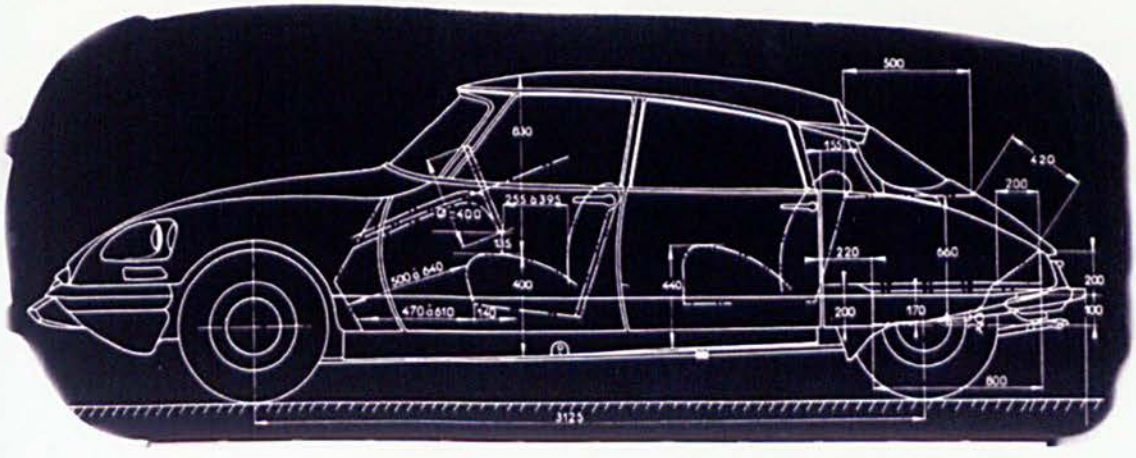


Fig. 32, Cover and page from "AS in DS: An Eye on the Road", 1983.

Fig. 33, R. Hamilton, "Hommage à Chrisler Corp.", oil, metal foil and collage on panel, 122 x 81 cm., 1957, Tate, London .

Fig. 34, R. Hamilton, "$he", oil, cellulose and collage on panel, 122 x 81, 1958-61, Tate, London.

Fig. 35, R. Hamilton, "Chiara & chair", inkjet digital print, 2004, Tate, London .

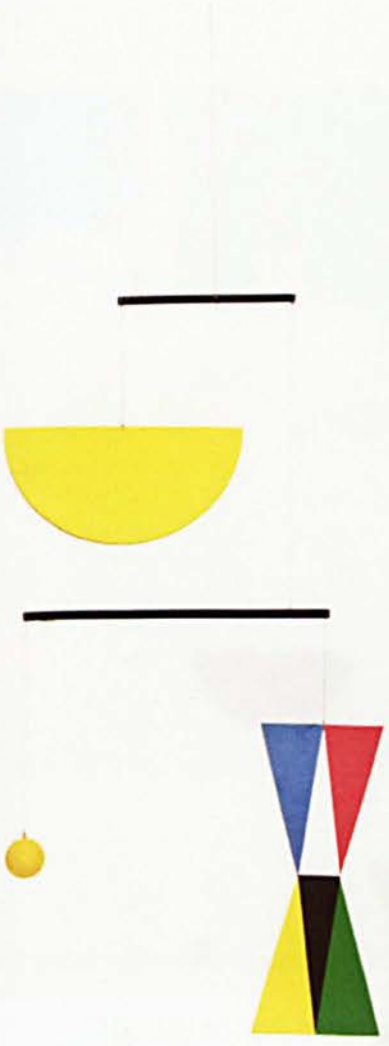


Fig. 36, "Useless Machine for Max Bill", tempera on cardboard, wiry and wood, 80 x 40 cm, 1951-1993.

Fig. 37, B. Munari, "Useless Machine", aluminium, squash shell and wood, 1934.

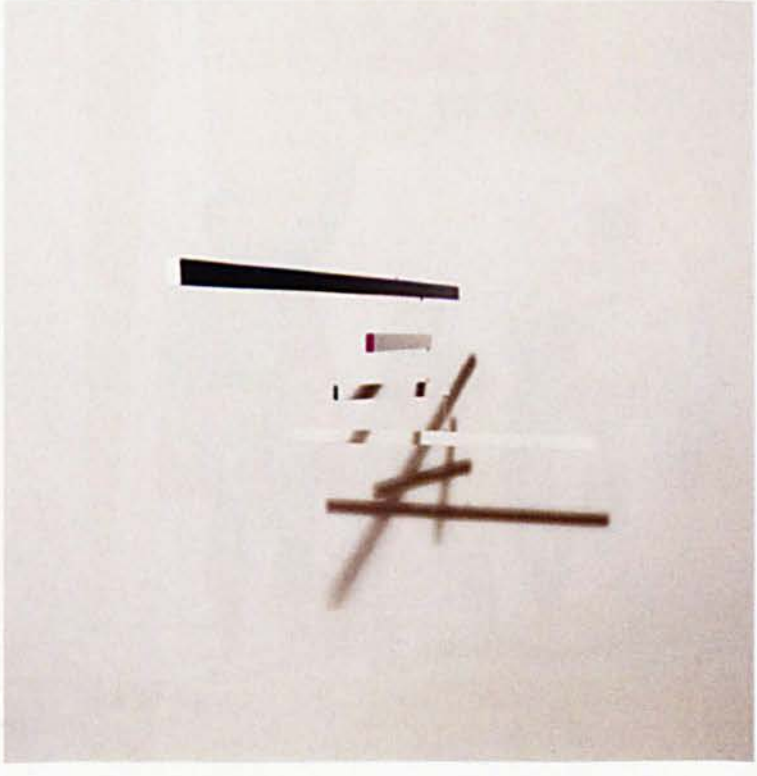


Fig. 38, B. Munari, "Useless Machine", aluminium, 1956-1968.

Fig. 39/40, Westinghtone Ads featuring The Middleton Family, 1939.

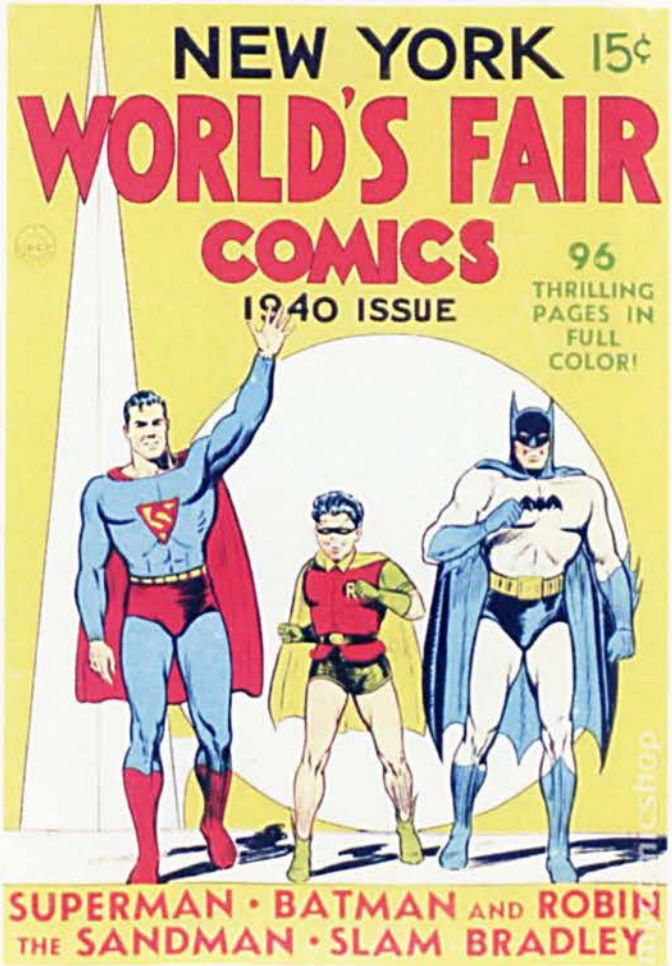


Fig. 41, "New York World's Fair Comics", cover, 1940.

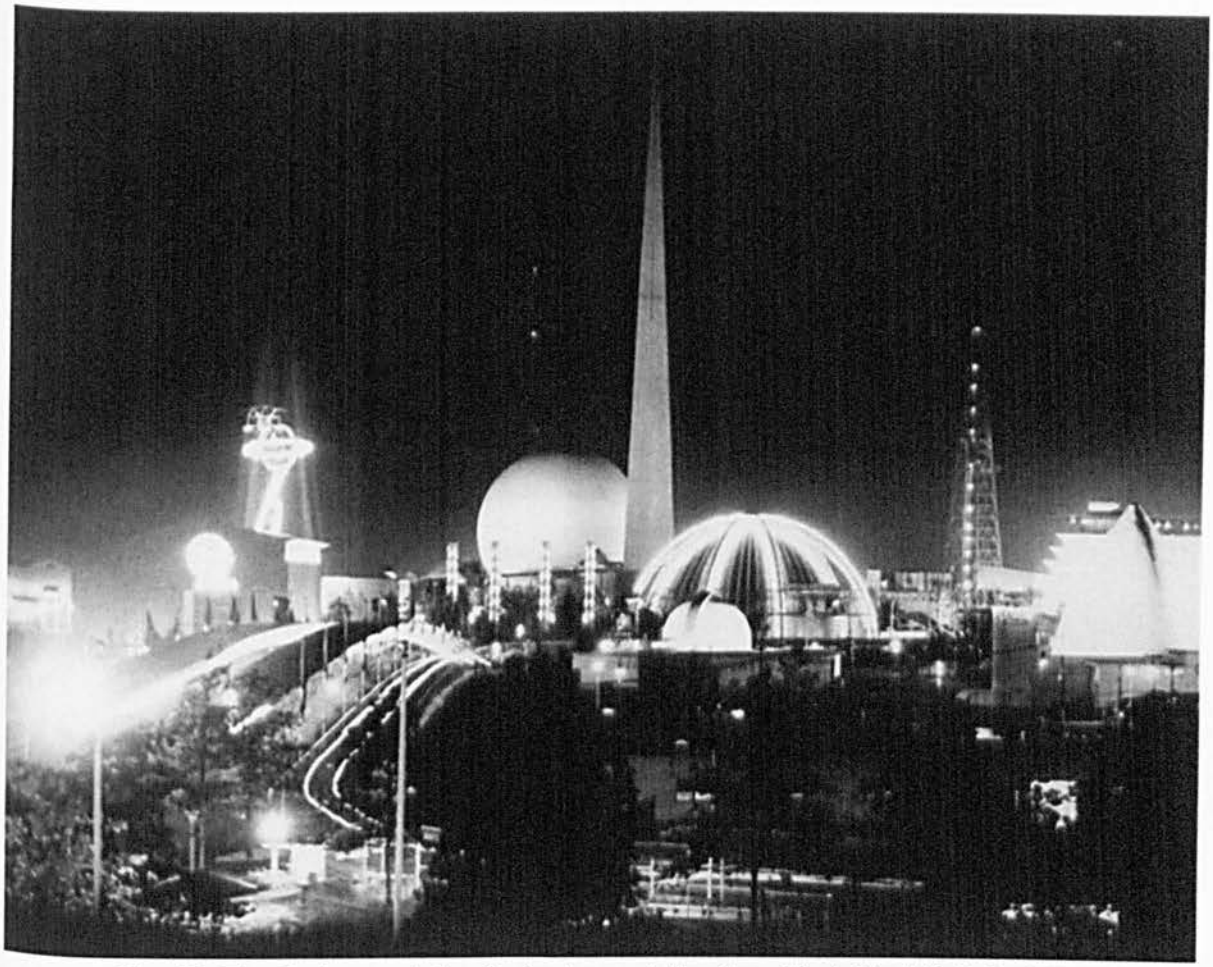


Fig. 42, The Trylon and the Perisphere at the New York World's Fair, 1939.

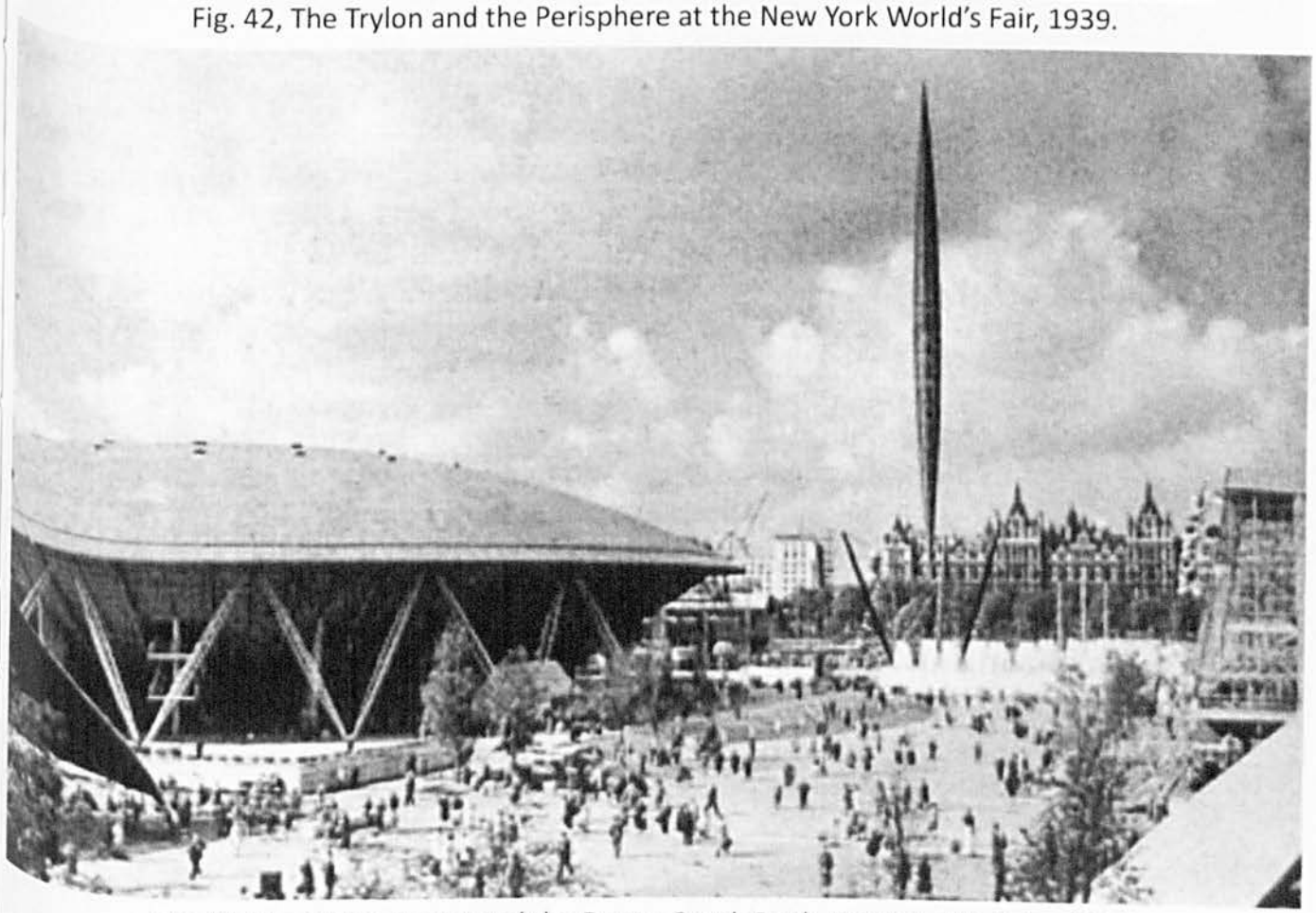


Fig. 43, The Skylon tower and the Dome, South Bank, Festival of Britain, 1951.

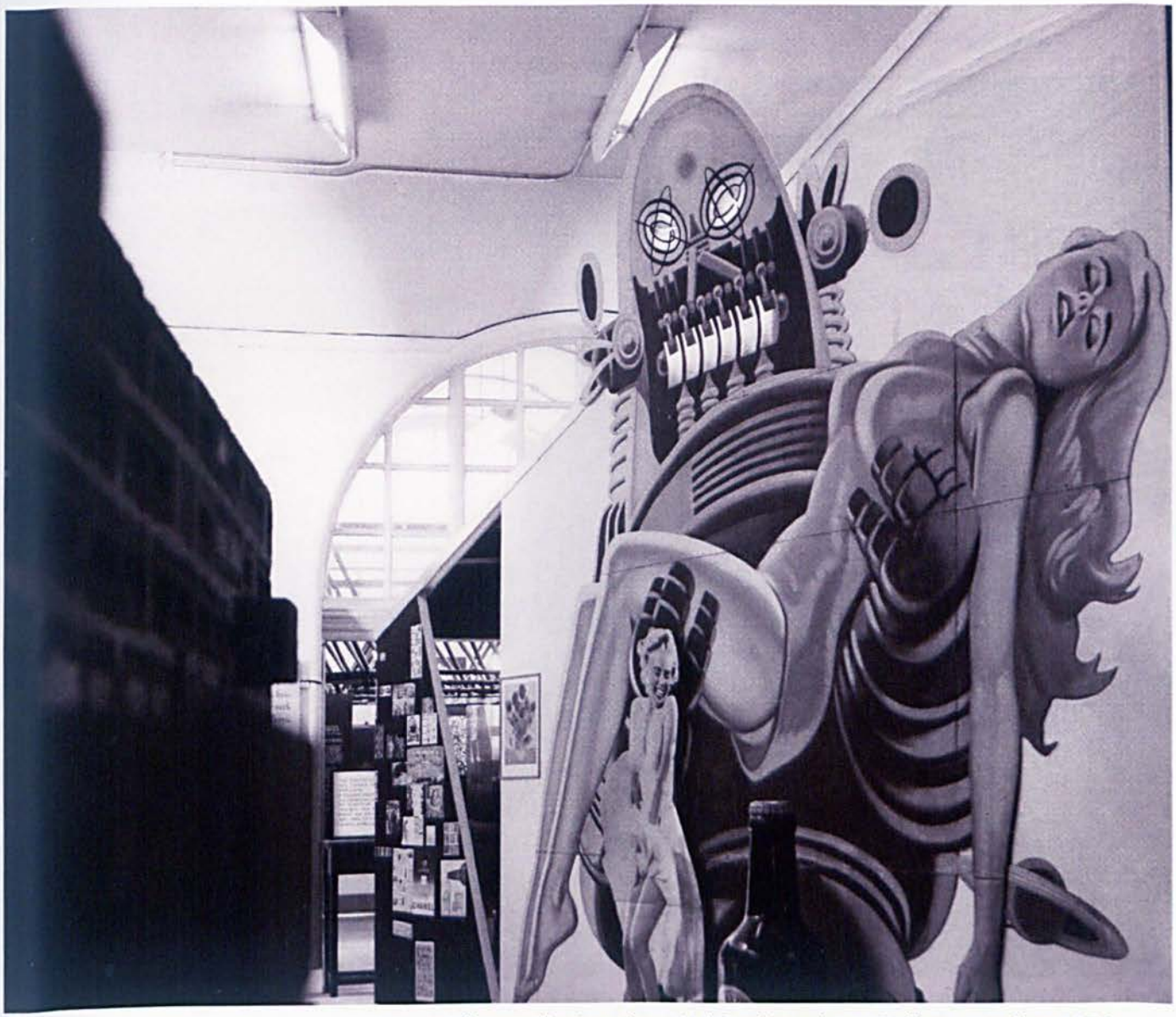


Fig. 44, "This is Tomorrow, Group 2", installation view, Whitechapel Art Gallery, London 1956.

Fig. 45, Poster for "Forbidden Planet", 1956.

Fig. 46, "This is Tomorrow, Group 6, Patio and Pavilion", installation view.

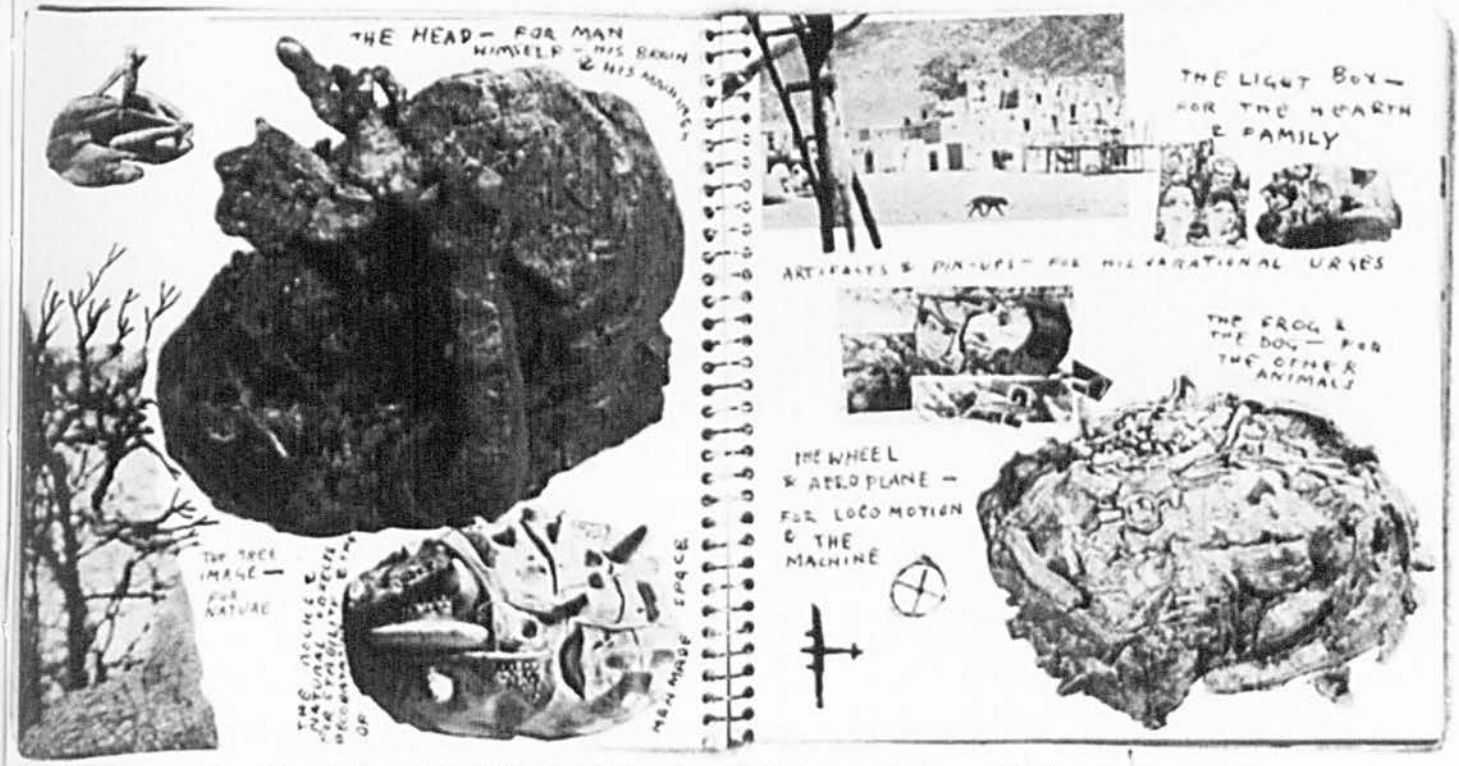


Fig. 47, "Patio and Pavilion", from the exhibition catalogue, "This is Tomorrow".

Fig. 48, A. and P. Smithson "The House of the Future", the living room, "Daily Mail Ideal Home Exhibition", Kensington Olympia Hall, London, 1956 .

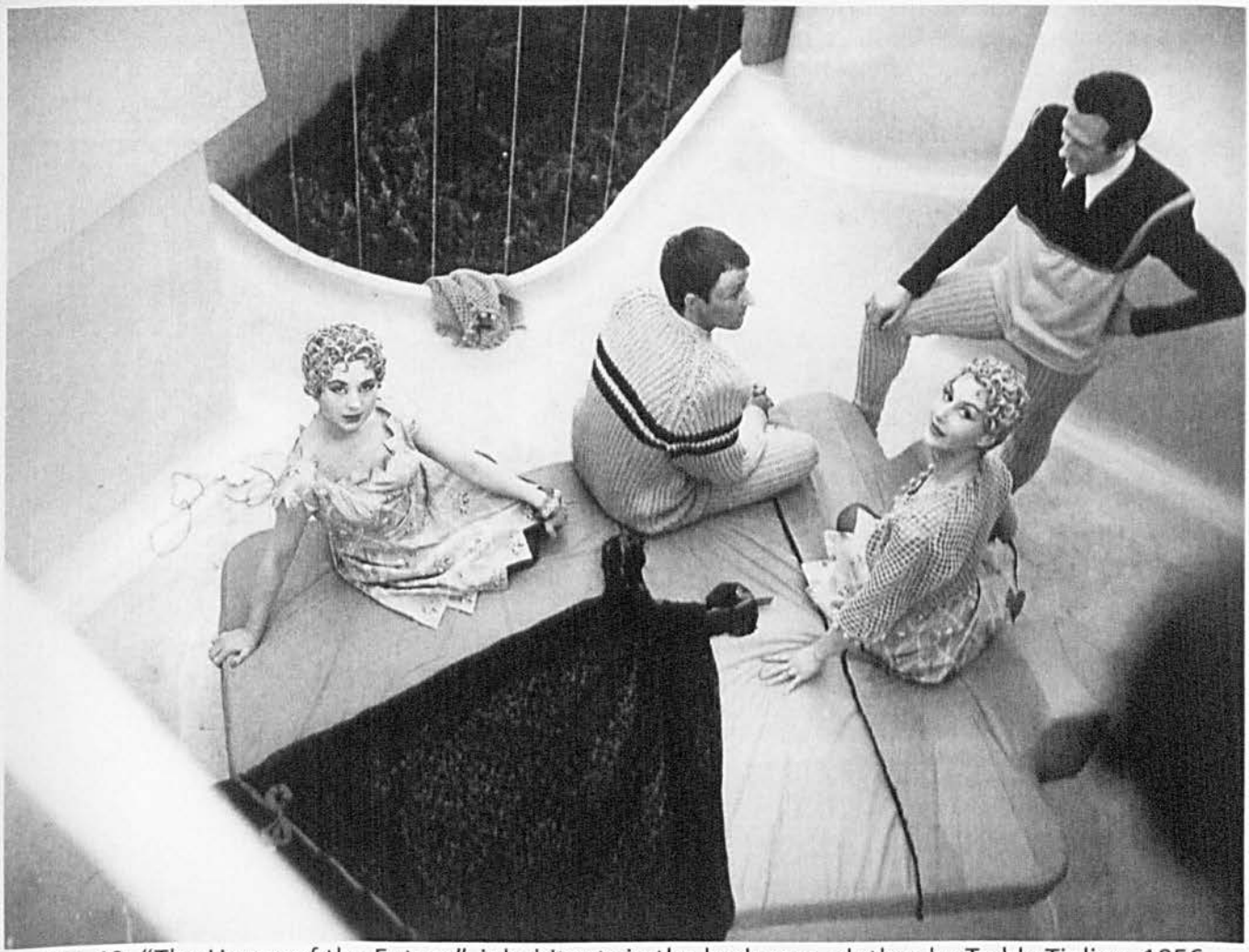


Fig. 49, "The House of the Future", inhabitants in the bedroom, clothes by Teddy Tinling, 1956.

Fig. 50, "The House of the Future", inhabitants in the dressing room (clothes by Teddy Tinling, 1956).

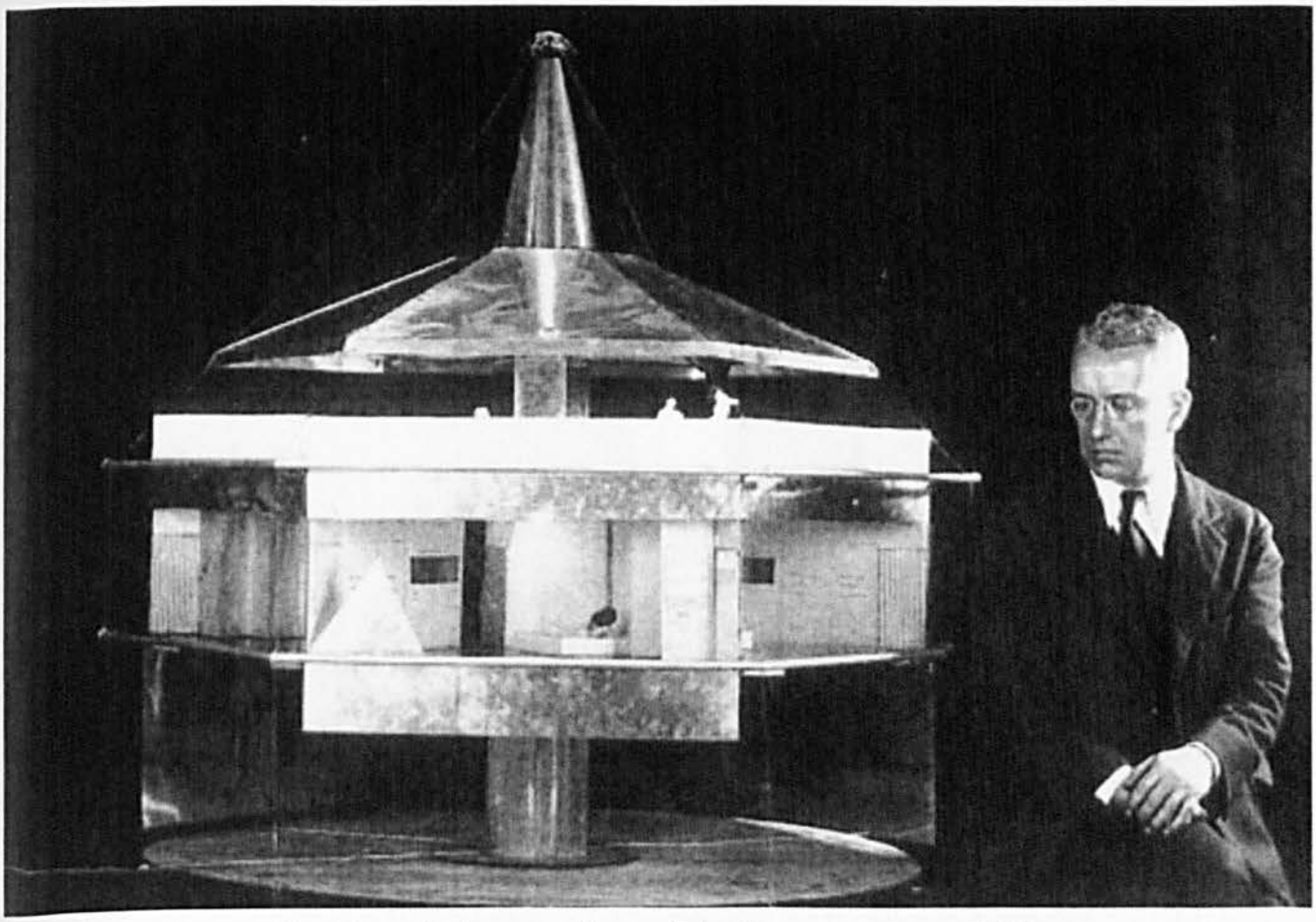


Fig. 51, Buckminster Fuller and The Dymaxion House, 1932.

Fig. 52, The Monsanto House of the Future, 1956.

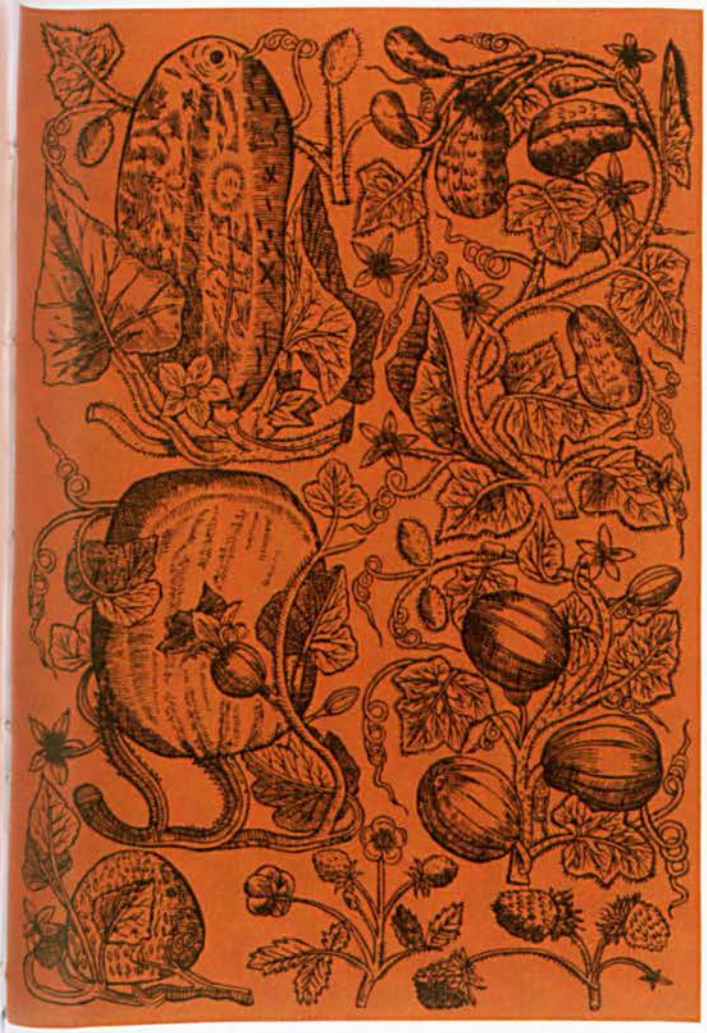


Fig. 53, Hammer Prints Ltd, "Cowcumber", wallpaper, 195.

Fig. 54, Hammer Prints Ltd, "Hessian", wallpaper, c. 1955-6.

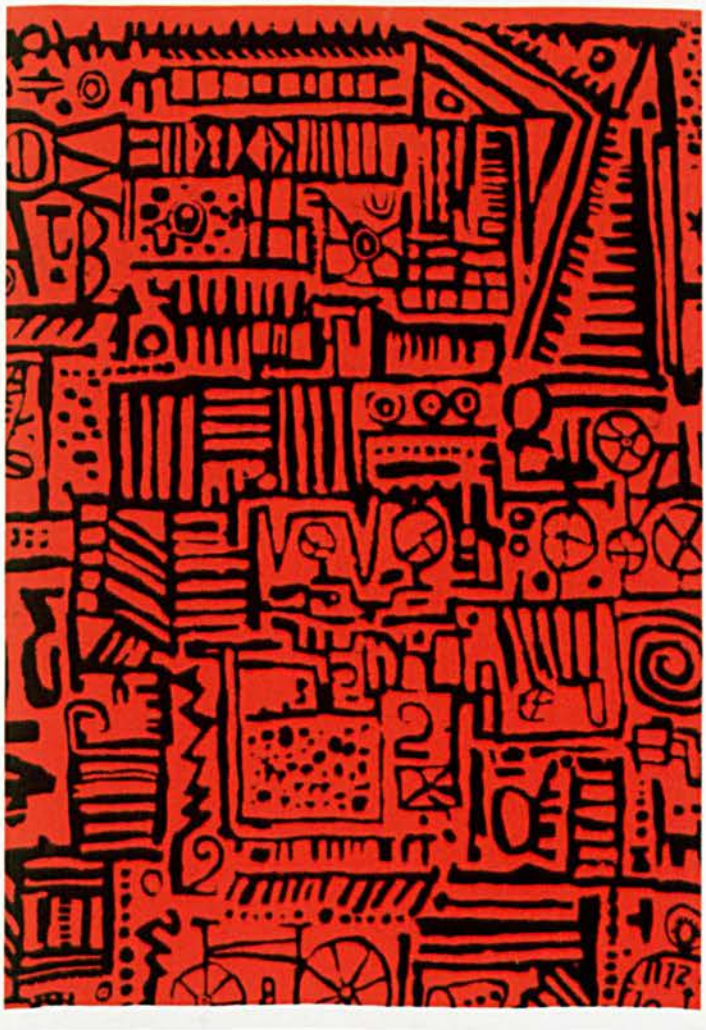


Fig. 55, Hammer Prints Ltd, "Barkcloth", printed and dyed cotton, c. 1957-72.

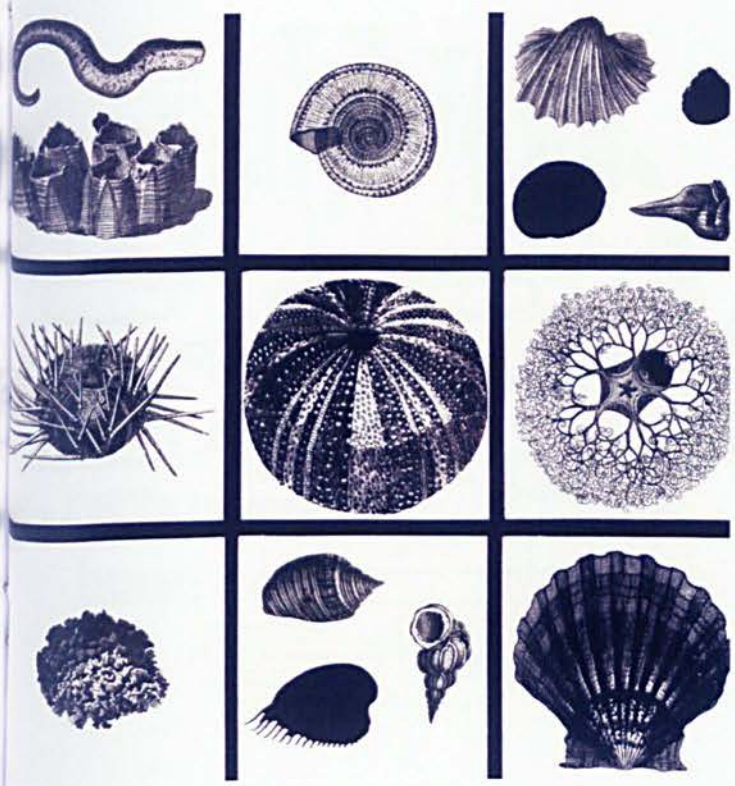


Fig. 56, Hammer Prints Ltd, "Sea Beasts", ceramic tiles, c. 1956-60, 15.5 x 15.5 cm each.

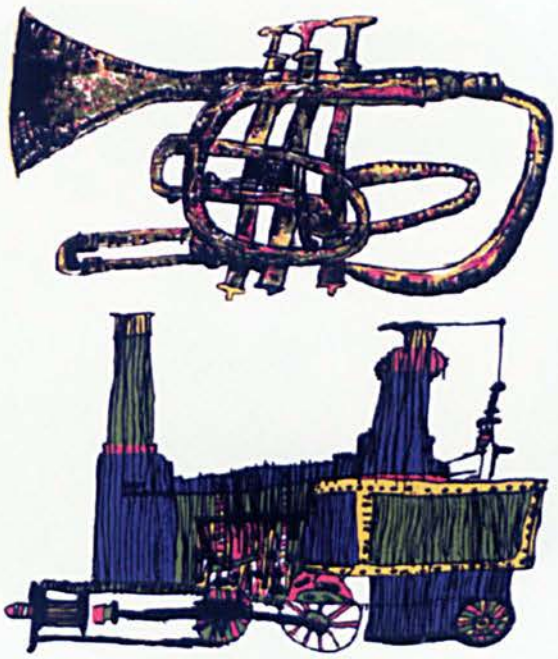


Fig. 57, Hammer Prints Ltd, "Toys", ceramic tile, c. 1956-58, 15.5 x 15.5 cm.

Fig. 58, Hammer Prints Ltd, "Toys", ceramic dinner plates, c. 1958-62, 26 cm diameter.

Fig. 59, Piero Fornasetti, "Orchestra", plate, 1950s, 26 cm diameter.

Fig. 60, Piero Fornasetti, "Theme and Variations", plate, 1950s, 26 cm diameter.

Fig. 61, Piero Fornasetti, "Sea-shells", trays, c. 1954, 58 x 25 cm.

Fig. 62, Sonia Delaunay, six clothing design, c. 1924.

Fig. 63, From the left: Farfa, Tullio d'Albisola and Filippo Tommaso Marinetti, 1930, Galleria Pesaro, Milan (ceramics by Farfa).

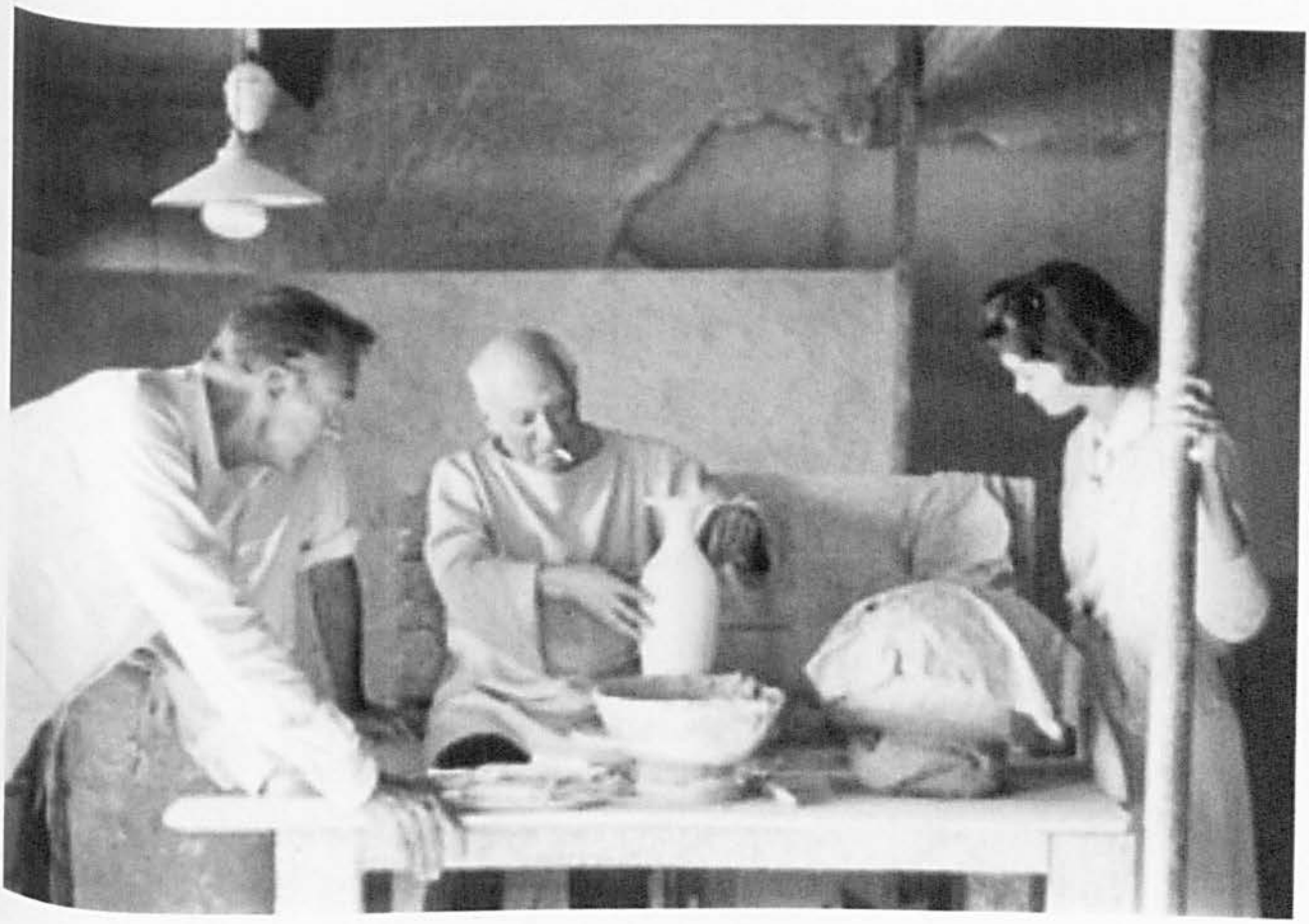


Fig. 64, Gary Cooper, Pablo Picasso, and Maria Janis Cooper, Madoura ceramics workshop, Vallauris, 1956, ©Lee Miller Archive.

Fig. 65, Giuseppe Pinot Gallizio, "Roll of industrial painting", mix media, 1958, 64.5 x 7.400 cm.

Fig. 66, Giuseppe Pinot Gallizio with roll of industrial painting, Alba, 1956.

Fig. 67, Asger Jorn, "Paris by Night", oil on reused canvas, 1959, 53 x 37 cm.

THE 100 "BEST DESIGNED" PRODUCTS

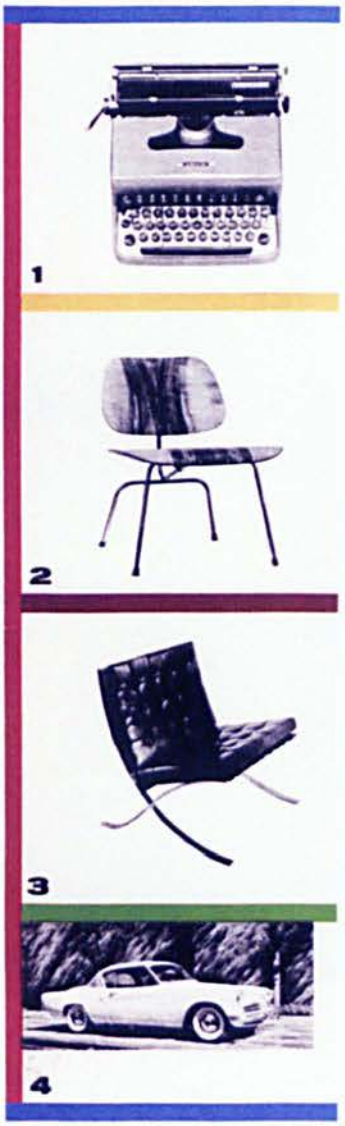
Last year Jay Doblin, director of the Institute of Design of the Illinois Institute of Technology, embarked on a fascinating—and brash—project. Finding it no trouble to pick out 100 "leading" designers, architects, and design teachers of the world, he figured that they in turn should find it no trouble to select the "best designed mass-produced products of modern times." Each member of the outsize "jury" was to name his top ten choices.

About eighty ballots were returned. Some well-known designers declined to participate, saying they thought the assignment was impossible. Some complied under protest: the selections, they said, would "merely reflect individual prejudices"; "assorted objects cannot be compared."

After the ballots came in, the institute found that only sixty-two products had been mentioned often enough to warrant their inclusion in a final list. The list of all products mentioned was sent back to the members of the jury for a second ballot. The final votes were tabulated and the products listed from 1 to 100 according to the number of votes they received. The selections led off with Olivetti's Lettera 22 portable typewriter (fifty-five votes) and ran through to the Gilbert Erector set (fourteen votes). They are shown on this and the following pages as a group for the first time, with captions (keyed to their ranking) giving the name of the product, the date of design, the designer, and the manufacturer.

Some of the selections obviously were chosen for purely aesthetic reasons, others because they were trend setters, still others out of sentiment or nostalgia. A few (the Talon zipper, for instance) are surely more invention than design. And motivational-research men might find it fruitful to speculate why automobiles are the objects most frequently cited (fourteen times), with chairs runner-up (thirteen).

The selection as a whole is certainly provocative. It comprises many of the "classics" on which designers seem to agree. This may bewilder the layman, who will be surprised to find the Franklin stove, the Model T, and the Victor talking machine next to the slickest modern design. A single judge would undoubtedly have come up with a more homogeneous selection. But it would hardly have been as interesting.



1 Olivetti Lettera 22 portable typewriter, 1950. Designer: Marcello Nizzoli. Olivetti Co., Ivrea, Italy.

2 Eames side chair, 1947. Designer: Charles Eames. Herman Miller Furniture Co., Zeeland, Michigan.

3 Barcelona chair, 1929. Designer: Ludwig Mies van der Rohe. Knoll Associates, Inc., New York.

4 Studebaker hard-top coupe, 1953. Designer: Raymond Loewy Associates. Studebaker Corp., South Bend, Indiana.

Fig. 68, Jay Joblin, "The 100 'Best Design' Products", in "The Fortune", April 1959, pp. 135-141.

Fig. 69, Max Bill at "Die gute Form", Basel Mustermesse, Basel 1949.

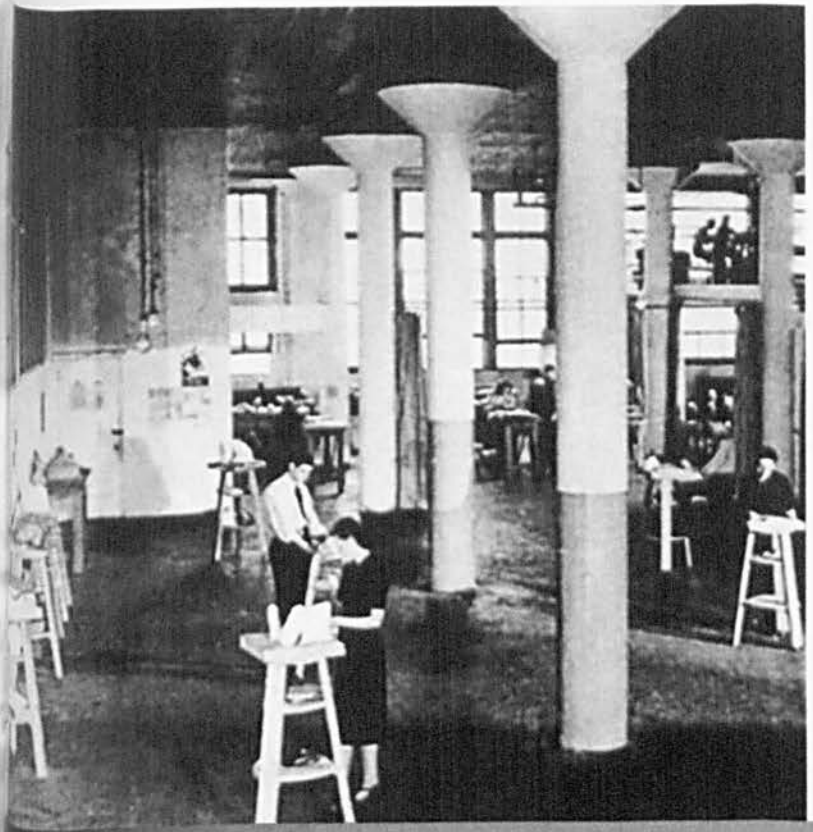


Fig. 70, Institute of Design, Chicago 1938, photo by Lazlo Moholy-Nagy.

Fig. 71, The HfG Ulm, Ulm 1956, photo Wolfgang Slol, © HfG-Archiv Ulm.

Fig. 72, "Good Design", installation view, The Museum of Modern Art, New York 1952, photo by Soichi Sunami, © The Museum of Modern Art Archive.

Alan Ballantyne

ITALIAN

SCRAPBOOK

The greater part of Italy was fought over during the war, and as a result of shelling by both sides, Allied bombing, and often unnecessary German demolition, suffered extensive damage. Nearly 19,000 bridges were wrecked, ports and communications were disorganized, historical monuments were devastated, and almost two million houses were utterly destroyed, with another five million damaged. Much of Italy's post-war reconstruction has been devoted to the reopening of road and rail communications, bridge-building, and to the repair of churches and historical buildings. The loss of colonies, involving repatriation, combined with an increase in the birthrate, have produced an acute housing problem.

In many cases housing is dealt with by building societies and local works organizations, supported by funds from ERP, in others by the Condominium —a means whereby a number of private citizens pool funds for the construction of new blocks of flats, each flat ultimately being owned outright by the individual. The contribution of local authorities towards rebuilding is generally negligible as most are bankrupt. It is the State, under the Fanfani Reconstruction Plan, which contributes 50 per cent of the cost of schemes it supports, and the co-operative organizations, that achieve most. The priorities of reconstruction are first, restoration of historic churches and monuments; second, communications; and only third, rehousing, an order which seems to arouse little comment from Italians themselves.

The main reasons Italy has made such progress with her reconstruction are that there is no shortage of building materials (prices of which were fully decontrolled in 1947), that there is an adequate and enthusiastic building force, working a full six-day week, night shifts and sometimes even on Sundays, and that all rebuilding contracts are undertaken by private enterprise.

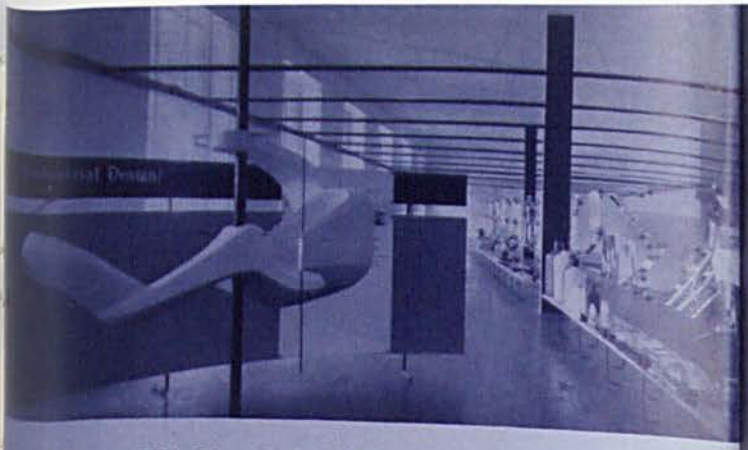
But prefabrication is in its infancy: every part of a building, even all the windows and doors, are purpose-made. The greatest obstacle to the acceptance of prefabrication as a principle is the conservatism of the building industry, which is reluctant to experiment. An example was Luigi Cosenza's project for a Red Cross building in Naples, designed in steel cantilever frame with double central supports, because he doubted that it would ever be built. However, on receiving the commission to go ahead, he was, as he expected, unable to find a contractor to undertake the prefabrication of the structural members in steel, which would have meant employment of men off the site. He had no difficulty finding those who were prepared to erect the building in reinforced concrete on the site. Experiments in prefabricated building components have been tried out in Milan at QT8 where several different types of small two and three-storey houses and terraces have been erected to gain experience.

Italians excel in RC construction, but have few real artists like Nervi (Exhibition Hall at Turin, Stadium at Florence and various aircraft hangars near Rome). Almost every building over one storey has an RC frame with panel fillings of a mixture of brick, hollow clay blocks, and rubble, with no scientific attempt at either soundproofing or heat insulation but with the external wall surface 'finished' with a coloured cement rendering, a facing of marble

Fig. 73, Allan Ballantyne, "Italian scrapbook," in *Architectural Review*, February 1952, Vol. 111, n. 662, pp. 82-91.

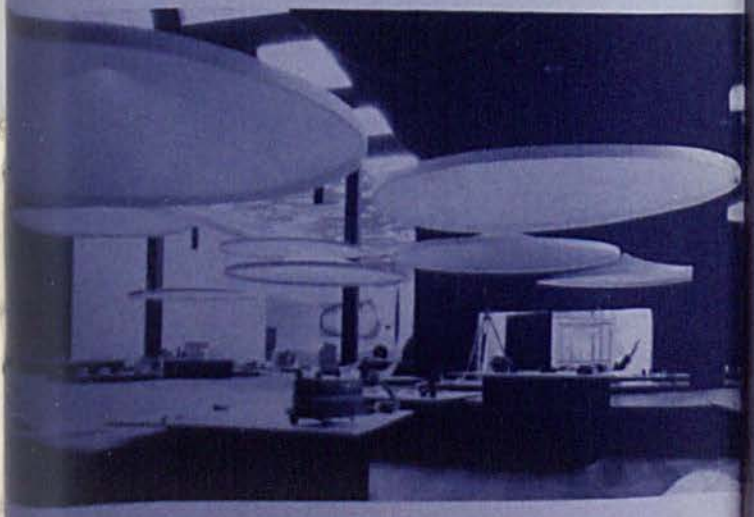
Fig. 74, Tomás Maldonado at the exhibition "This is Tomorrow", London 1956.

Fig. 75, "Rassegna Internazionale dell'Industrial Design", installation view, X Triennale, Milan 1954, © Archivio Storico La Triennale di Milano.



A IXth Triennale, Milan 1951: exhibition 'La Forma dell' Utile'.

B Xth Triennale, Milan 1954: 'Exhibition of Industrial Design'.



landmarks in the development of industrial design in Italy

A true notion of the nature of industrial design has developed in Italy only recently. The principal landmarks in this development are: 'La Forma dell'Utile' (the shape of the useful), an exhibition arranged at the IXth Triennale of Milan (1951) by the architects Belgiojoso and Peressutti (plate A); the 'Mostre dell'Estetica Industriale' (exhibitions of industrial aesthetics) arranged by Mario Ballocco at the 'Fiere Campionarie di Milano' of 1952 and 1953 (plates C and D); 'Arte e Tecnica', a travelling exhibition dealing with the relationship between art and techniques, with particular reference to industrial design: it was suggested and arranged by the architects Albini and Helg, and the writers Anceschi and Dorfles in 1953; the 'Industrial Design Exhibition' at the Xth Triennale (1954), arranged by Achille and Giacomo Castiglioni, Menghi, Morello, Nizzoli, Provinciali, and Rosselli (plate B); the 'Congress of Industrial Design', concurrent with the above exhibition, which was attended by the most important representatives of industrial design from all countries; and

Fig. 76, Pages from the Exhibition catalogue for "Italian Industrial Design", The Italian Institute, London 1955.

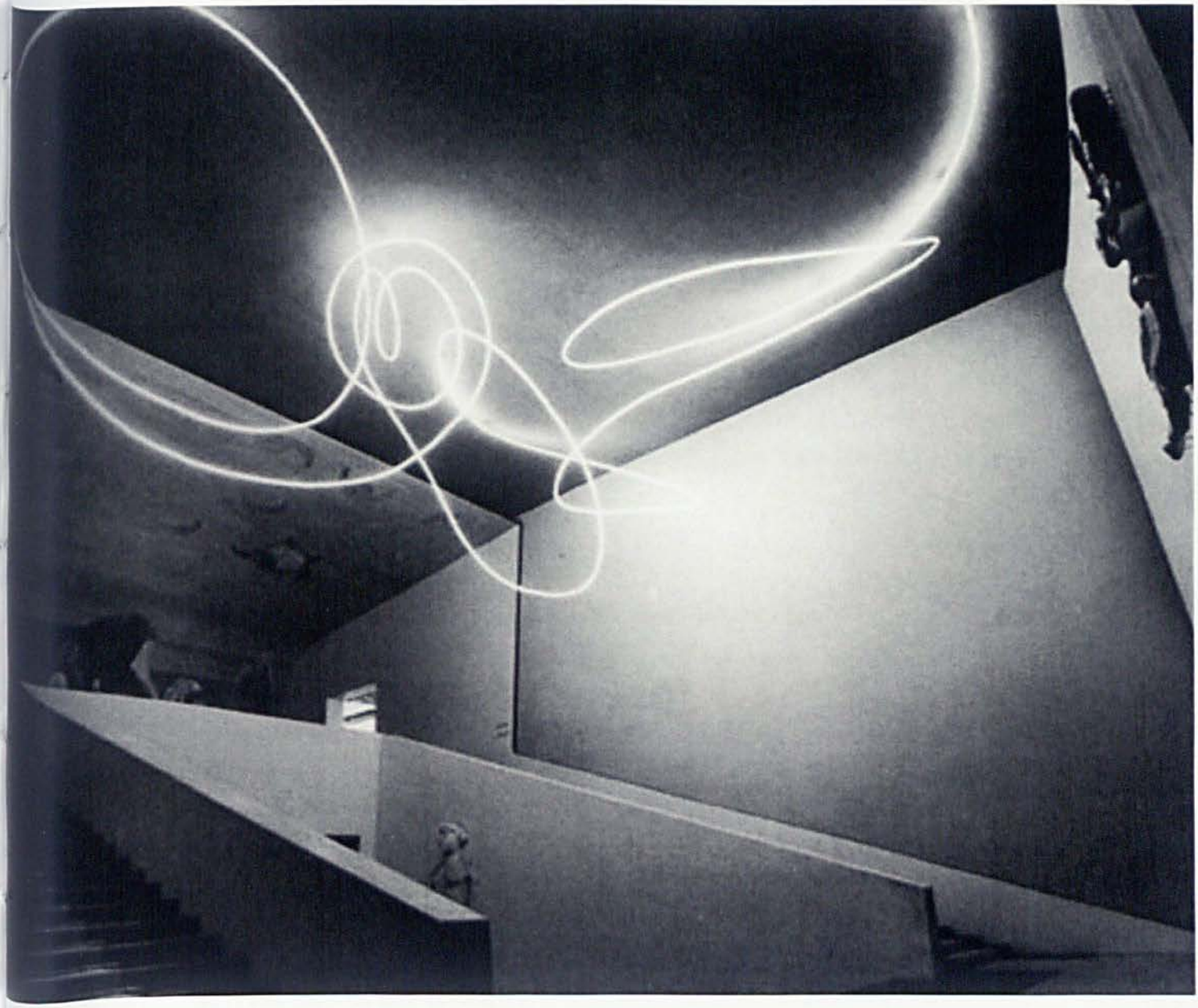


Fig. 77, Lucio Fontana, neon structure, IX Triennale, Milan 1951,
© Archivio Storico La Triennale di Milano.

MARRIAGE OF TWO MINDS

HIS

authoritarian hegelian metaphysical
dream of gesamtkunstwerk great union of
all disciplines total art
ideal conception of spiritual harmony under single godlike mind
tradition of
roman planning wagnerian opera synthetist theatre
eupalinos l'esprit nouveau la groupe espace
one will directing hierarchy of hands
culture hero
leonardo da vinci

HERS

libertarian rousseauistic mediaevalising
dream of willing collaborators under
scriptorium conditions AMDG
or at least AMG of some high pure aspiration without pretense
tradition of
nazarenes preraphs kelmscott century guild
worpswede werkstatte bauhaus
wills and hands in free association
cult object
gothic cathedral

Fig. 78, Page from *This is Tomorrow*' catalogue, Whitechapel Gallery, London, 9 August–9 September 1956.

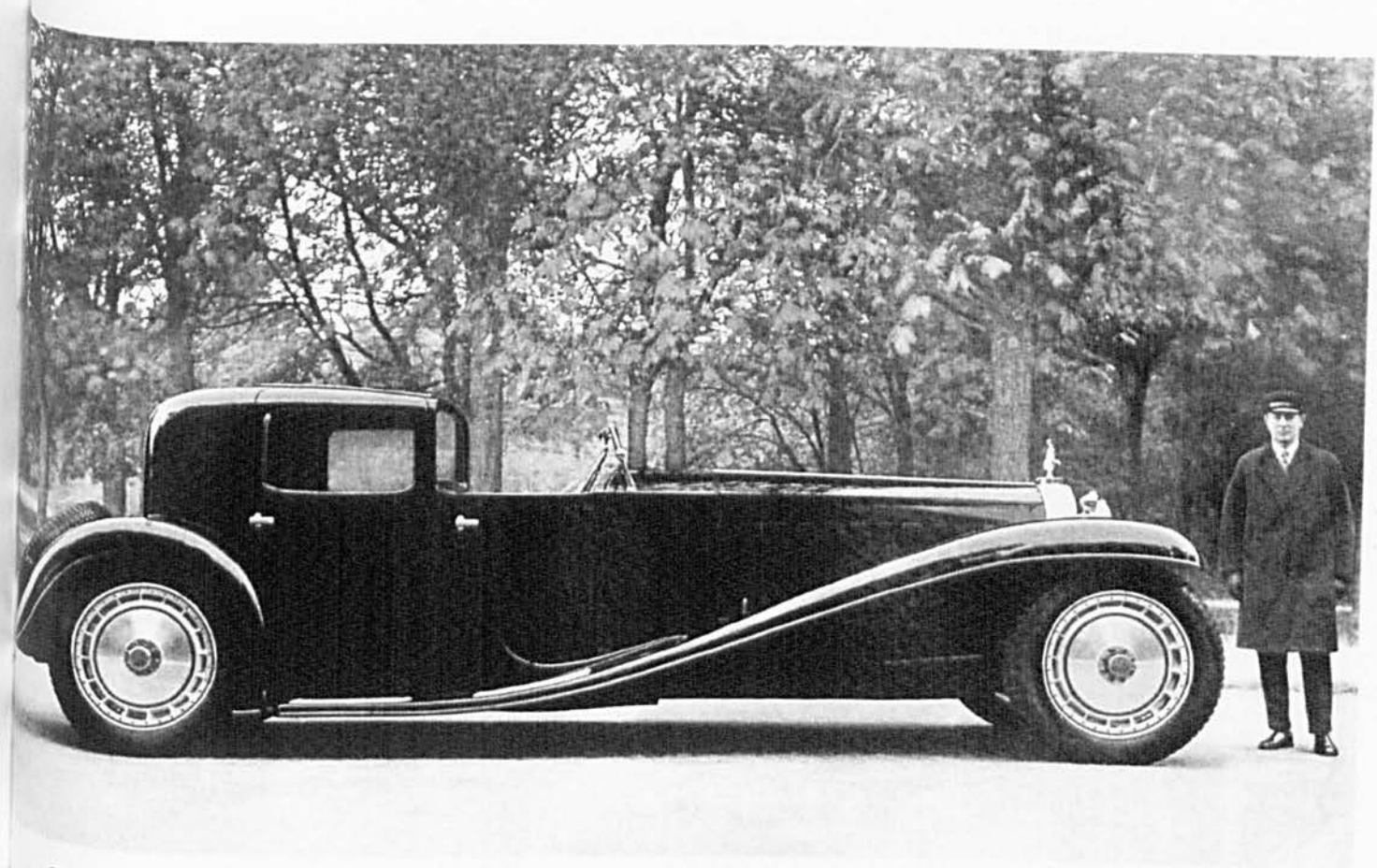


Fig. 79, Ettore Bugatti's personal car, Type 41 Royale Coupe Napoleon with family chauffeur, 1927.

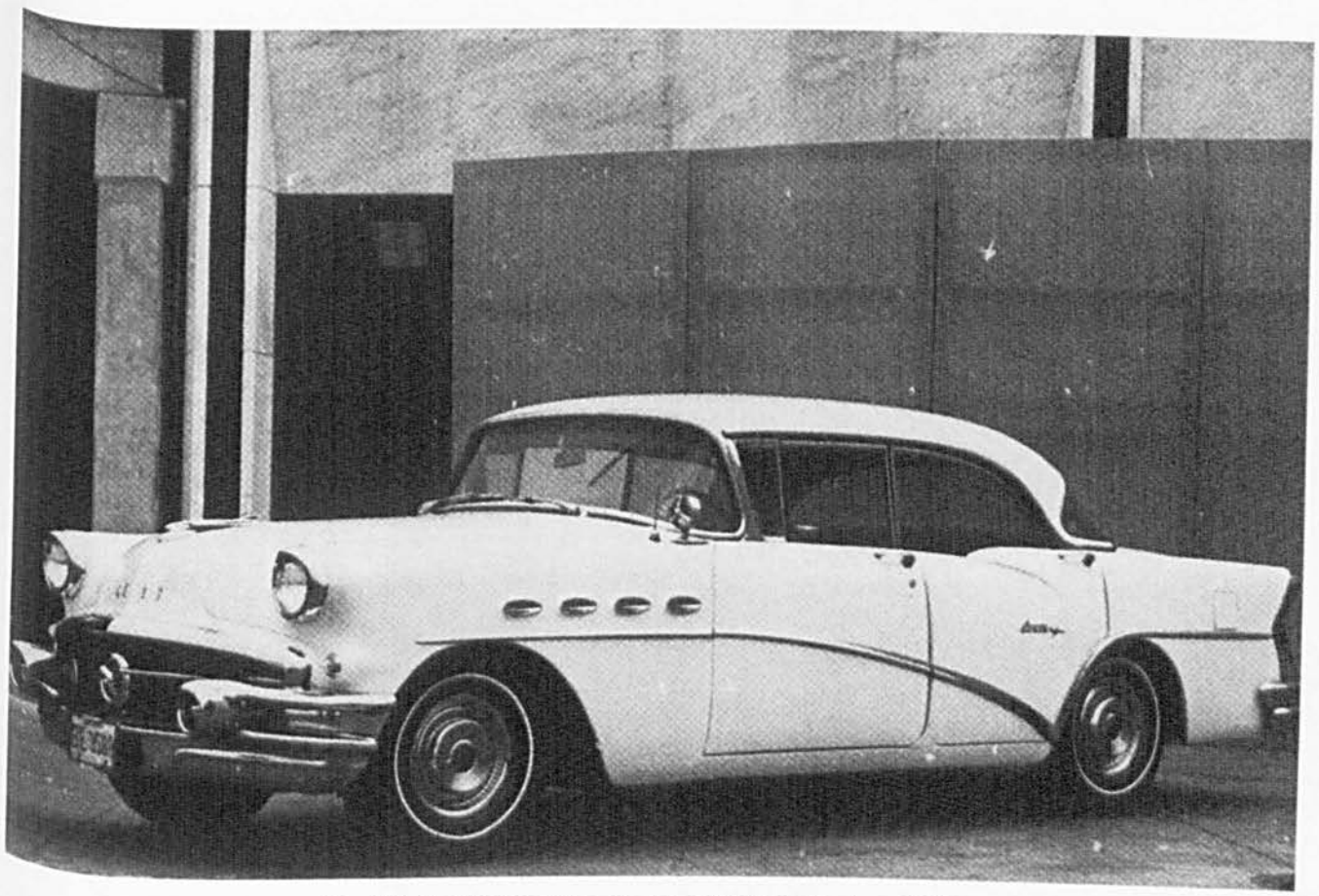


Fig. 80, Buick Century de Luxe Riviera Sedan, 1956.

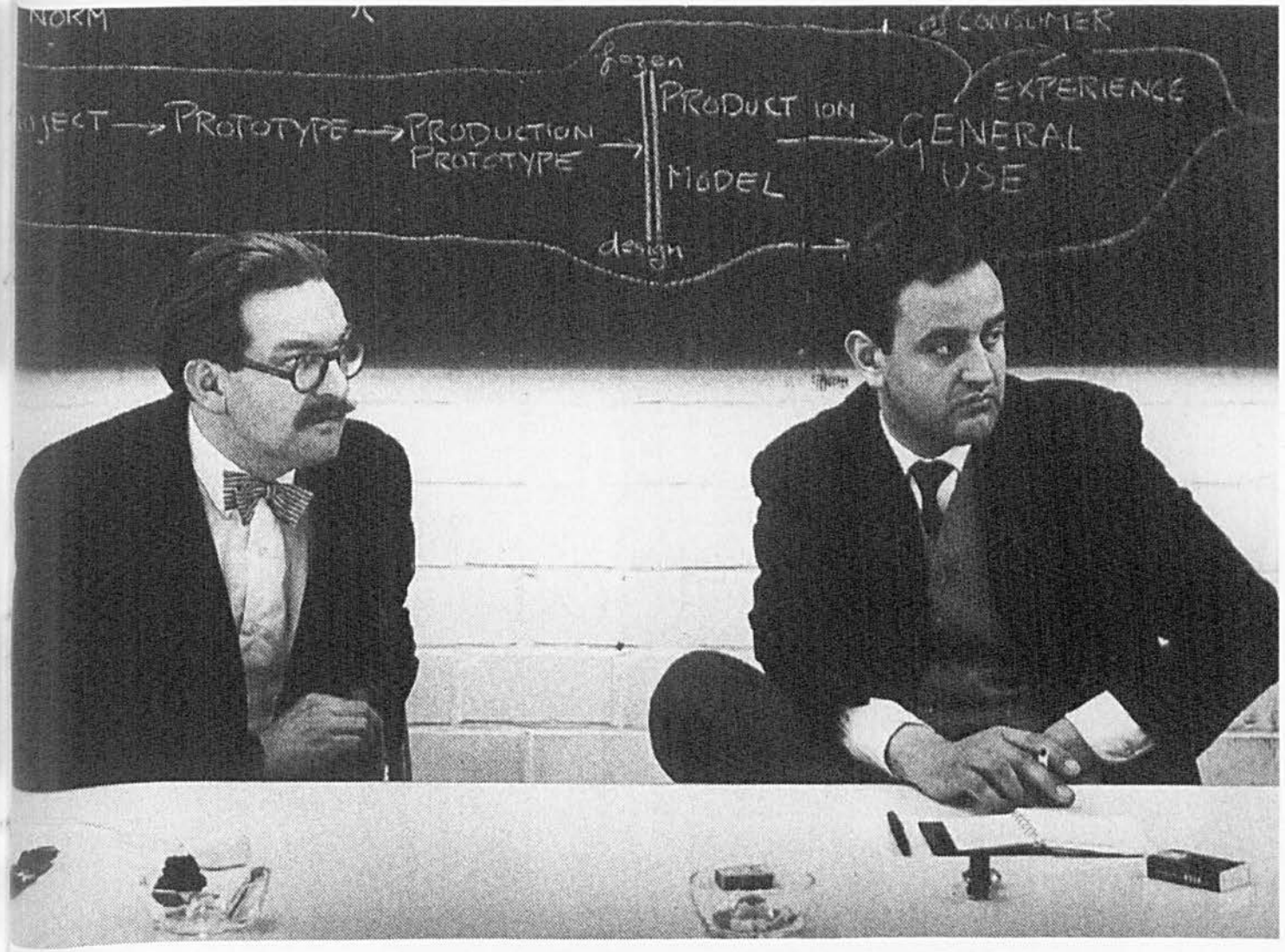


Fig. 81, Reyner Banham and Tomás Maldonado, Ulm 1959, photo Wolfgang Slol, © HfG-Archiv Ulm.

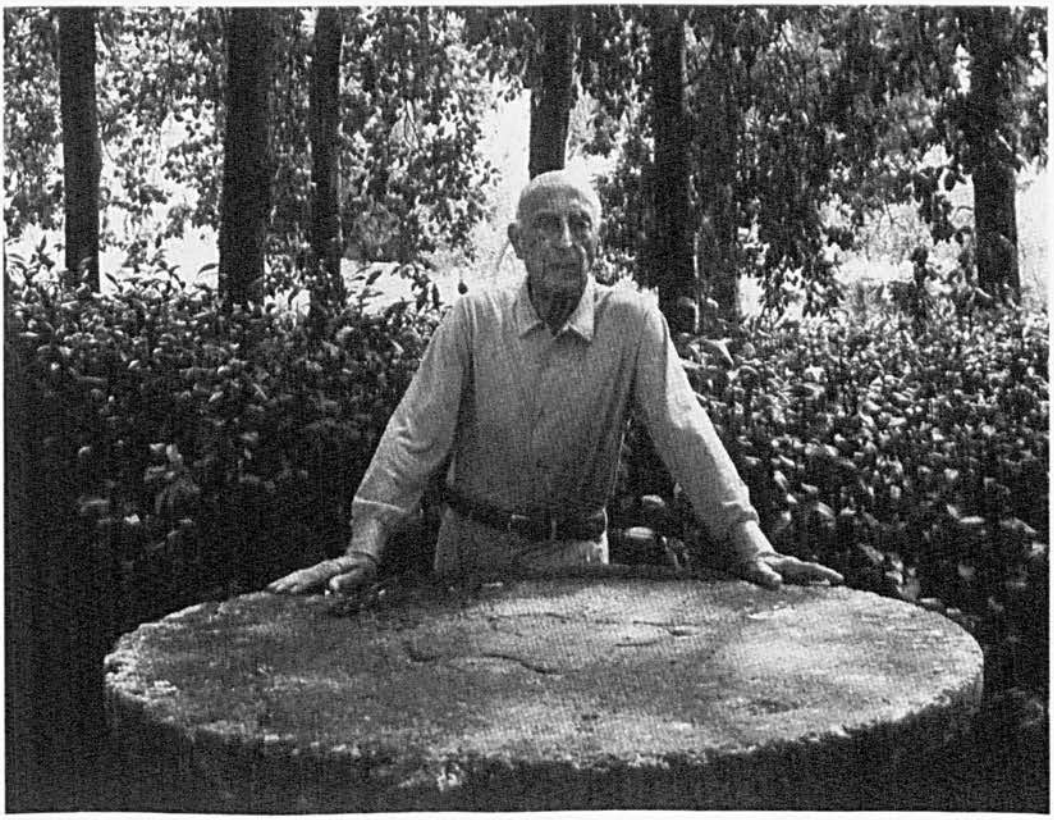


Fig. 82, Gillo Dorfles, Lajatico (Pisa), 2006.

Fig. 83, Gillo Dorfles, "Introduzione al disegno Industriale", Einaudi, Turin 1972.

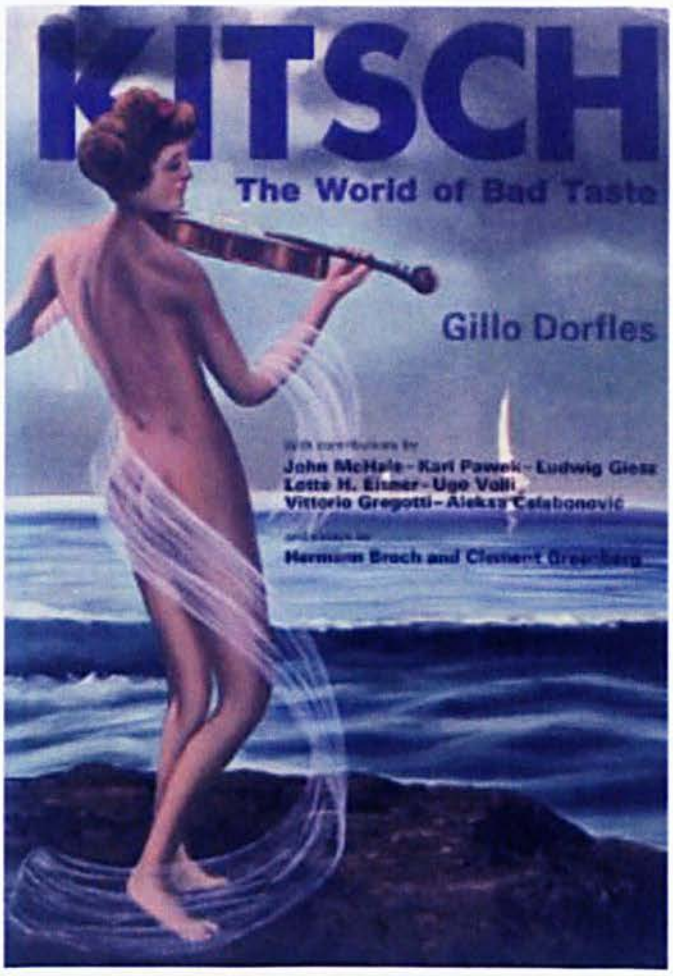


Fig. 84, Gillo Dorfles, "Kitsch. The World of Bad Taste", Bell Publishing, New York 1969.

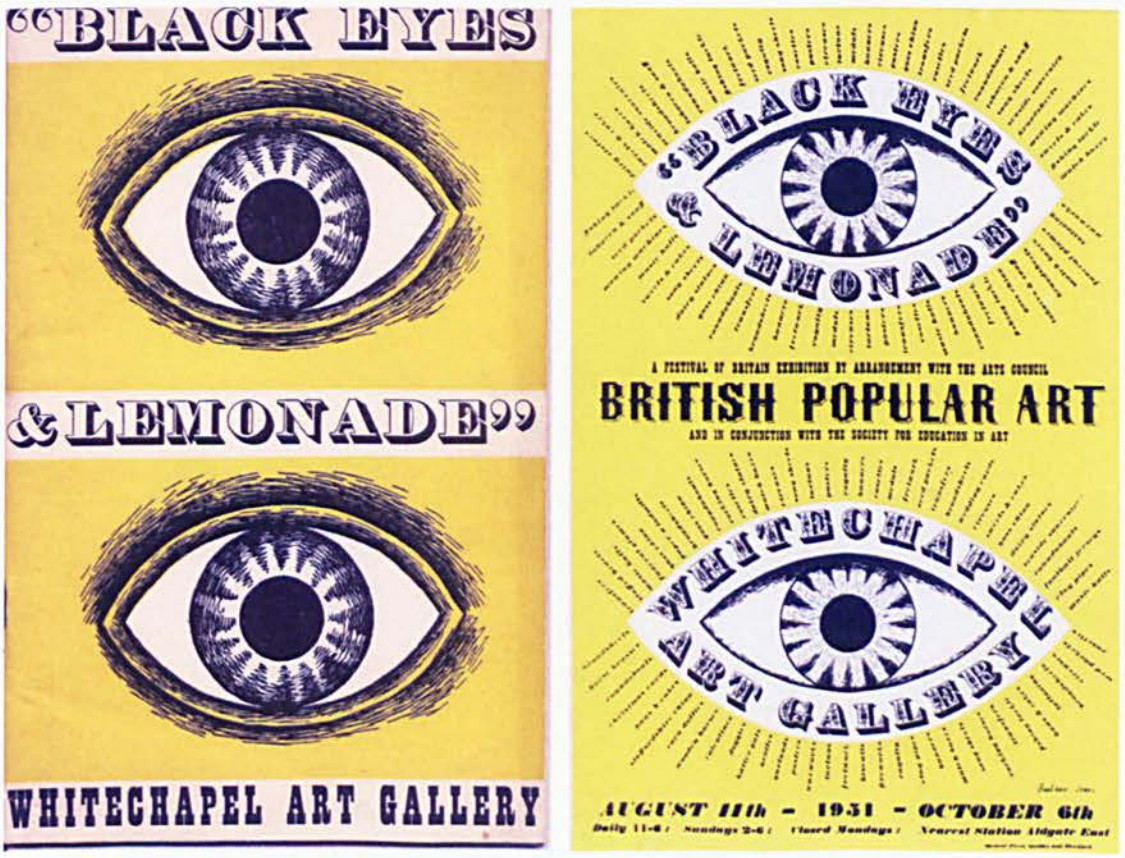


Fig. 85, posters for "Black Eyes and Lemonade", Whitechapel Gallery, London 1951.

Fig. 86, Collection of objects by the Memphis Group, 1980s.

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