Illustrating the Design Process: The Bernat Klein Collection and Archive, National Museums Scotland

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Serbian-born textile designer Bernat Klein (1922–2014) emigrated to the United Kingdom in 1945 and based his textile manufacturing business in the Scottish borders. From humble beginnings this young émigré designer went on to produce couture fabrics for the leading fashion houses of Europe. Klein also worked as a colour consultant and industrial designer during an illustrious career spanning four decades. This article explores Klein's design process by drawing on the archive and collection of his work held by National Museums Scotland. Heriot Watt University also holds a substantial collection of Bernat Klein's work and comparisons are made between the two collections. Focusing on fashion textiles, this article investigates and draws connections between objects within the collection, shedding new light on Klein's practice as a textile designer in post-war Britain. The relationship between Klein's paintings and textiles and his pioneering approach to colour is also investigated. The extensive press archive held by National Museums Scotland and Klein's own writings are called upon to contextualize the discussion of Klein's design process and his changing relationship with the fashion industry. Keywords: colour—fashion—modernism—Scotland—émigré European designers—textile design and manufacture

In 2010 National Museums Scotland acquired the collection and archive of textile designer Bernat Klein (1922–2014). Klein established his textile design business in the Scottish borders in 1952 and went on to produce couture fabrics for the fashion houses of Europe. In addition to the design of fashion fabrics Klein was an accomplished artist and worked as a colour consultant and industrial designer for various international firms.

Spanning c.1952 to 1992, and comprising almost 4,000 objects, the collection provides a comprehensive overview of Klein's work, including, textiles, garments, oil paintings, press material, design development material and commercial ephemera. The collection originated as Klein's personal archive, retained as a record of his long and diverse career, before coming under the care of National Museums Scotland. Because the collection was amassed by an individual, it contains a wealth of design development material and ephemera alongside finished products. In isolation this material would appear fragmentary but in the context of the collection it provides valuable insights into the designer's working process. These previously unpublished elements of the collection are explored in detail. Conversely, the origin of the collection, i.e. the designer's personal archive, is a source of weakness; the collection is not representative of every fabric produced by Klein, and the business records present do not shed much light on the economic history of Klein's career.

Heriot Watt University also holds a substantial collection of Bernat Klein's work, dating from the 1960s to the 1980s; including pattern books, fabric samples, garments, mail order catalogues, knitting patterns and commercial ephemera. The Heriot Watt collection originated with the purchase of Netherdale Mill in 1992, where Klein based his business from 1956 to 1966. The University inherited pattern books and sales records, which form the core of the collection. The collection has subsequently been added to through donations of textiles and garments from members of the public. This article draws comparisons between the two collections.

Using the National Museums Scotland collection as its starting point, this discussion explores Klein's design process relating to fashion textiles. Connections between elements of the collection are made to form a historical narrative and shed new light on Klein's practice and his position as a textile designer in post-war Britain and beyond. Klein was a Modernist and, in the spirit of post-war optimism, firmly believed that design had the power to change lives.³ His life and work are inextricably linked, from his commissioning of Modernist architect Peter Womersley to design his home and studio to his strong views on personal style. Therefore, this discussion follows a loosely chronological approach, contextualizing objects within the collection with biographical information and Klein's own writings.

Bernat Klein was born in Senta, Yugoslavia (now Serbia) in 1922, into an Orthodox Jewish family that ran a textile business.⁴ Klein's family were sent to Auschwitz in 1944; tragically only his brother and father survived.⁵ Bernat attended the Bezalel School of Art & Craft in Jerusalem during the 1940s and as a result escaped persecution by the Nazis.⁶ In 1945 Klein

moved to England to study textile technology at Leeds University, graduating with a diploma in woven textiles in 1948.⁷ While studying in Leeds Klein met his future wife, Margaret Soper.⁸ Klein spent the rest of his life in the UK, becoming a naturalized British citizen in 1950.⁹

After a period of working for various British firms including Tootal Broadhurst Lee in Bolton and Munrospun in Edinburgh and Galashiels, Klein established his own firm Colourcraft in Galashiels in 1952.¹⁰ It is notable that Klein chose to base his fledgling business in the Scottish borders, a part of the world steeped in textile history with a wealth of local manufacturing expertise. The company's beginnings were humble. The start-up funding was borrowed from a friend, and production took place in part of a weaving shed with only four looms.¹¹ The firm's initial sales came in the form of woven scarves, retailed through Woolworths, British Home Stores, and Marks and Spencer.¹² During this time the business expanded rapidly, leading to the purchase of Netherdale Mill in 1956.¹³

In spite of the firm's commercial success Klein was not satisfied with designing conservative products for chain retail outlets, and dreamed of producing more experimental textiles.¹⁴ He was inspired by the Scottish landscape to resume oil painting as a means of expressing his frustrated ideas concerning colour and texture.¹⁵ These experiments in oil would inform future textile designs and served as an important platform for visual experimentation.

The National Museums Scotland collection includes eight oil paintings dating from between 1962 and 1969. Interestingly, Klein did not use sketchbooks, and his paintings provide important insights into his design process and approach to colour. Klein did not seek to simply recreate the colours found within the natural world through the medium of woven textiles; he was interested in Modernist art and colour theory and these elements fed into his practice. [1] shows a painting entitled Tulip. This work demonstrates how Klein broke an image down into flat planes of pure colour, which when viewed as a whole form a coherent picture. Klein was particularly captivated by the pointillist works of Georges Seurat and the following quote comes from his autobiography: Of Seurat though and his colours and textures I could only dream; and I dreamt of cloths that contained not just three or four colours as is usual in textiles but dozens and dozens of them... I dreamt of cloth vibrant with colour, soft in texture, light and practical to wear, easy to make up; but above all new and bright and living with colour; I wanted reds that were red- der and blues that were bluer than anything I had seen before and I wanted to see cloth in many colours that had never been attempted before. ¹⁶

Colour was a lifelong obsession for Klein and was arguably the keystone of his design practice. While Klein's vividly coloured cloths were a unique achievement, it was another talented young émigré textile designer that introduced the British public to colour in the post-war period. Hungarian-born Tibor Reich set up his business in the mid-1940s in Stratford-upon-Avon and was lauded for his technical innovations and daring approach to colour. Indeed Klein undertook some contract work for Tibor Ltd, in the mid-1950s and they were part of a network of émigré designers working in Britain. Britain.

Klein stated that his design process began, not with pattern, but with yarn design.¹⁹ He wished to include multiple colours in a single yarn and from his studies of Seurat he knew that the planes of individual colour had to be of an opti- mal size to achieve the desired colour effects.²⁰ After much experimentation Klein decided on brushed mohair yarn, which was just beginning to be used in commercial textile production.²¹ This yarn was chosen for its light-reflective properties and apparent thickness, although it is actually exceptionally light and relies on the brushing of the fibres to give it its deceptive visual weight.

Klein was able to achieve the colour effects that would become his signature through a process called space-dyeing. Space-dyeing involves resist and dip-dyeing one yarn in multiple colours. The National Museums Scotland collection includes yarn sample books containing space-dyed mohair yarns, which illustrate how Klein managed to include such a variety of colours in a single cloth. From this sample book [2] we can see that this process allowed a single yarn to contain eight colours, resulting from multiple immersions in different dye baths. The sample books also reveal that Klein's space-dyed yarns were produced by Galashiels-based dye firm Kemp Blair & Co. The company was located close to Klein's own mill, Netherdale, where weaving was carried out.²² This highlights the pool of expertise that existed in the Scottish borders in the mid-twentieth century.

Once the technical challenges of spinning, brush- ing and dyeing had been overcome these multi-coloured yarns had to be carefully combined to form the finished textile product.

The looms that Klein worked with at this time contained four shuttles.²³ When the multiple colours made possible through space-dyeing are factored into this equation, up to thirty-two colours could be employed in one design.²⁴ The sheer number of colour combinations meant that careful colour selection and placement were vital in ensuring Klein's desired aesthetic and balance of colour.

In the mid-1960s Klein made a series of tools he called *colour boards* to assist in the process of selecting colours for the design of woven textiles [3].²⁵ Klein stated that one of his primary concerns when designing textiles was to *combine colours that will dovetail* and *do something for each other, that you couldn't get out of them on their own*.²⁶ The yarns are arranged in horizontal rows of balanced colour, with each row containing colours of the *same visual weight*.²⁷ These wooden boards are punctuated with grooves, into which tabs with different coloured yarns are slotted and can be easily moved to test colour combinations.

In the early 1960s, after much experimentation, Klein succeeded in producing a range of spacedyed fabrics, often referred to as *mohair tweed*. These new fabrics attracted widespread media coverage, a press cutting from the archive states: *Bernat Klein's cloths have been described as the first real breakthrough in colour and design technique for over half a century and Mr Klein is certainly an unusual combination of technician and artist.²⁸*

In 1962 he received the financial backing of Imperial Tobacco Company Ltd, giving him the opportunity to market his couture fabrics to an international audience.²⁹ The company was renamed Bernat Klein Ltd and fabrics were sold through agents in Europe and America.³⁰ Dress historian Jacqueline Field has noted the challenges of positively attributing fabrics to Bernat Klein because he sold his fabrics anonymously through agents.³¹ Whilst the archive at National Museums Scotland does not include any correspondence or business records showing the interaction between the company and its agents, the collection at Heriot Watt is more illuminating in this respect, as it includes sales records and pattern books annotated with the names of fashion houses that purchased specific fabrics, and purchase dates. Although there is a degree of overlap between the two collections in terms of content, they hold pattern books containing different fashion fabrics dating from between c.1960 and 1980, which helps create a more comprehensive picture of Klein's output during this period.

Throughout the 1960s Bernat Klein Ltd. showed two couture collections and one ready-to-wear collection annually to European and American buyers. ³² Klein's major breakthrough came when his mohair tweed fabric was selected by Chanel for their Spring 1963 collection. This launched him into the international couture market and designers such as Pierre Balmain, Pierre Cardin, Dior, Nina Ricci, Yves St Laurent, John Cavanagh, Hardy Amies, Mattli and Victor Stiebel all featured Klein fabrics in subse- quent 1963 collections.³³

The collection at National Museums Scotland contains seventeen press books compiled by

Klein's companies dating from 1962 to 1992, which provide an invaluable record of the reception that Klein's textiles received. They also reveal the value placed on the role of the textile designer and position Klein among a new wave of émigré textile design- ers—including the Aschers, Miki Seekers, and Tibor Reich—reinvigorating British textile design in the post-war period.³⁴ When Klein's textiles are viewed in the context of fashion history, it becomes evident why they were so popular in the 1960s couture market. At this time designers such as Pierre Cardin and Mary Quant were utilizing new and unexpected textiles such as PVC and Perspex within their collections, and the development of new synthetic fabrics was rapidly accelerating. Klein's innovative dye methods and bold colour combinations chimed with the fashion industry's appetite for the new. The simple silhouettes and clean lines favoured by couturiers worked in Klein's favour, as his striking textiles made a statement without the need for elaborate tailoring.

The following year, 1964, saw the creation of yet another innovative fabric that cap- tured the imagination of the couture market. *Velvet tweed*, a fabric that utilized lengths of velvet ribbon as warps, with space-dyed mohair and wool wefts, dominated the European catwalks and was lauded by the press [4].³⁵ Like the mohair tweeds that preceded them the creation of this new fabric involved adapting existing industrial manufacturing process. Klein widened the eyelets (the wire structures that hold the warp yarns in place) on his power looms to accommodate lengths of ribbon rather than traditional yarns.³⁶ The result was a luxurious textile, which gave the appearance of being handmade.

Klein's velvet tweeds were very expensive to produce. Indeed they were dubbed *the most expensive tweed in the world*, and as a result their application was initially limited to couture garments.³⁷ Pattern books within the collection at Heriot Watt reveal that this design was subsequently modified to cut down on the cost of production. Fewer velvet ribbon warps were included and synthetic organza ribbon was used in place of velvet ribbon. In spite of these modifications velvet tweed was only produced for a few years due to the expense of production. Closer inspection of pattern books and textiles within the collection at National Museums Scotland provides further insights into the evolution of Klein's manufacturing process. The collection contains five pattern books of womenswear couture fabrics, dating from c.1960 to 1970, collated as a record of the company's most successful and iconic fabrics. [5] shows a playful variation of a houndstooth check, weaving together brightly coloured wool slub and mohair yarns. The image on the right shows the reverse of this fabric and the interwoven double cloth structure which keeps the open yarns on the face of the cloth together. When compared with earlier examples dating from the mid-1950s, which also employ open weaves and space-

dyed mohair, it becomes evident that these earlier fabrics were far less sturdy and unsuitable for tailoring. They do not contain the innovative double cloth backing that gave the later fabrics their structural integrity.

The collection at National Museums Scotland contains three pattern books of Klein's lesser known menswear fabrics, dating from c. 1960 to 1966, [6] shows an example of men's suiting fabric made from space-dyed wool. Although many colours are woven together the effects are much more subtle. The press archive reveals that Hardy Amies produced experimental menswear garments featuring Klein's fabrics for Leeds-based tailors Hepworths in 1964.³⁸ However these menswear fabrics were not a commercial success and there is no record in the collection or press archive of any menswear fabric being produced by Klein after 1966.³⁹

The contrast between the reception of Klein's menswear and womenswear fabrics is an interesting one, illustrating how commercial timeliness can have an impact on the output of a textile designer. Comparison of these pattern books reveals that Klein experimented far more with womenswear fabrics, dreaming up creative approaches to construction and daring colour combinations. He was able to do this because the mar-ket existed for it and his designs resonated with a particular moment in fashion history.

In 1966, under increasing pressure from Imperial Tobacco to improve financial performance, Klein resigned from Bernat Klein Ltd and set up a design consultancy business: Bernat Klein Design Consultants Ltd. 40 Klein did not wish to compromise his deeply held beliefs concerning design in the name of profit and used this opportunity to explore other avenues such as interior design, product design, and colour consultancy for various national and international firms. 41 However he did not abandon production of his fashion textiles. In 1969 he rented Waukrigg Mill in Galashiels, resuming small-scale production of his woven fabrics before moving to a purpose-built studio designed by Modernist architect Peter Wormersley in 1972. 42

In 1969 Klein designed a range of screen-printed designs and colour schemes for knitted polyester dress fabrics for British Enkalon. Promotional campaigns for these new fabrics emphasized their *space age* qualities and innovative use of newly developed fibres. Although still relatively expensive, these new polyester fabrics were aimed at the ready to wear market. The print designs were based on the abstract shapes and compositions produced by magnifying sections of Klein's oil paintings. Klein used the relatively new technique of large scale photographic screen-printing to translate elements of his paintings into fashion fabrics. These

designs were organized into colour groupings whereby a particular design contained multiple analogous colours, alongside smaller elements of complementary colours. The collection at National Museums Scotland includes several hundred samples of Klein's polyester print designs and print strike-offs, dating from 1968 to 1981. These samples show that Klein produced abstract designs in hundreds of different colourways and was constantly experimenting with colour relationships.

The post-war period saw increasing fluidity between fine art and textile design, with companies such as Ascher and Edinburgh Weavers commissioning prominent artists to inject new life into their products.⁴⁵ The relationship between Klein's paintings and textiles was well documented by the press and he arguably used his image as an artist to promote his personal brand. The collection contains publicity photographs dating from c. 1960 to 1980, illustrating how Klein portrayed himself as an artist, designer. For example, a publicity photograph from the early 1960s shows Klein at an easel, wearing an artist's smock, painting the Borders landscape.

In 1972 Klein launched his own collection of screenprinted knitted polyester jersey fabrics, which retailed under the name Diolen; printing was initially carried out in Germany, and later by Thomas & Arthur Wardle, Staffordshire. At this point in time Klein developed a more sophisticated method for selecting and balancing colours than the previously mentioned colour boards, in the form of the *colour box*. This wooden box consists of a series of dividers containing fifty-three card sheets with small pockets, housing painted paper colour samples and dyed yarns. The colour box was created as *a reference of easily identifiable balancing colours to speed up the process of design- ing textiles.* The system was based on the colour circle; on each sheet within the colour box a basic colour is situated at the top right, moving left this colour is mixed with increasing amounts of white and moving downwards with increasing amounts of black, achieving a variety of hues. As

The colour box is closely related to another object in the collection at National Museums Scotland, Klein's own copy of *Nordisk Textil Unions standard farvekort*. This colour guide was published by textile technologist Sven A. Barding in 1956 for the Nordic Textile Union as a resource of standard colours for use in textile manufacture.⁴⁹ This system is also based on the colour circle and each colour is represented on an individual page, where samples of dyed wool illustrate increasing degrees of saturation and greyness. Klein was a great admirer of Modernist Scandinavian design and worked with a number of Scandinavian firms.⁵⁰ It is evident that the principles of Barding's colour system inspired the creation of Klein's colour box and Klein

expanded upon the original system by creating further tonal variations for individual colours.

Like the samples present on the colour boards, the samples within Klein's colour box are all marked with a unique serial number according to colour. Correspondence within the archive shows the extent to which this colour system was used in terms of design development and communication with dyers and printers. For example, [7] (left image) shows correspondence to Klein's printers, containing colour samples of painted paper taken from the colour box to indicate changes in colour. The painted paper samples from the colour box were also used to develop new colourways for existing print designs and visually test colour combinations prior to printing, see [7] (right image).

In contrast to the post-war boom years during which Klein began designing fashion textiles, he responded to market changes by venturing into ready-to-wear fashion dur- ing a period of global recession. Klein's printed designs formed the basis of a series of mail-order catalogues, the first of which was launched in 1973, offering garments designed by Swedish designer Eric Sporrong.⁵¹ The collection at National Museums Scotland includes a complete run of Klein's mail-order catalogues dating from 1973 to 1980. Catalogues were colour co-ordinated and included pull-out colour charts to allow the consumer to match different garments to form an outfit.

The mail-order catalogues subsequently expanded to include hand-knitted garments designed by Margaret Klein, which were added from the mid-1970s. The collection at National Museums Scotland contains Margaret's designs for hand-knitted garments and knitted samples. These garments were knitted by outworkers across Scotland, using yarns designed by Bernat. Bernat and Margaret Klein were both very involved in the running of the business and these designs reveal that Margaret was a creative force in her own right. The later incarnation of the business saw Klein retail his clothing and textiles through his own shops, as well as through concessions in department stores.⁵²

The collection contains over a hundred garments from the ready-to-wear phase of Klein's career, and clothing which belonged to the Klein family. In 2016 National Museums Scotland opened a permanent fashion gallery, with a space dedicated to Klein's textiles. The increased visibility of the collection has led to further donations of garments and textiles from members of the public. These donations came with provenance and personal stories which enrich the collection and demonstrate the impact that Klein's ready-to-wear designs had on everyday fashion.

The collection and archive at National Museums Scotland charts a career spanning four decades and illustrates the relationship between a prominent textile designer and the fashion industry. It provides a unique insight into the British textile industry in the second half of the twentieth century. From humble beginnings this émigré designer rose to become a household name and a creative force in textile design. The mid-1960s represented a heyday for Bernat Klein's fashion textiles, characterized by innovation and international success. Klein responded to changes in the economic climate by venturing into the ready to wear market and experimenting with new fibres.

A desire to create exciting new products and challenge the technical limitations of mass produced textiles remained central to Klein's design philosophy throughout his career. However it was colour that lay at the heart of Klein's entire output, from his desire to create pointillist effects in woven cloth, to his construction of colour selection tools to assist in the process of balancing colours.

The size and scope of the collection and archive at National Museums Scotland has allowed connections to be drawn between objects and in doing so has shed new light on Klein's design process and the context in which he was working. It has also highlighted both the strengths and weaknesses of the designer's personal archive. By looking at the Heriot Watt and National Museums Scotland's collections simultaneously, a clearer picture has emerged of Klein's design practice and the way in which his business operated. This article is by no means a definitive history of Klein's career, but an exploration of his fashion textiles, guided by material culture present within the collection. Further research is required into the economic history of the business and the other avenues of Klein's career, such as his design consultancy and interior design commissions.

Notes

1. Bernat Klein purchased Netherdale Mill in 1956. Test pieces were woven at Netherdale and finished prod- ucts were woven at nearby mills St Mary's and Gibson & Lumgair. When Bernat Klein resigned from Bernat Klein Ltd in 1966, the company continued to produce tex- tiles using his name until 1968, when the company was renamed Gibson & Lumgair. The pattern books remained with the mill before coming under the care of Heriot Watt University's textile collection. Helen Taylor, inter- view, Heriot Watt University, Scottish Borders Campus, Galashiels, 15/06/2017.

2. Ibid. For further information on the Heriot Watt collection see, Helen Taylor, *Bernat Klein: An Eye for Colour*, Textile History, 41, no. 1: 50–69

- 3. Bernat Klein, Eye for Colour. London: Bernat Klein with Collins, 1965.
- 4. Ibid., 23-24, 99.
- 5. Ibid., 10.
- 6. Bernat Klein and Lesley Jackson, *Bernat Klein: Textile Designer, Artist, Colourist* (Selkirk: Bernat Klein Trust, 2005), 10.
- 7 Ibid.
- 8. Ibid.
- 9. Ibid.
- 10. Klein and Jackson, Bernat Klein, op. cit., 10-11; Klein, Eye for Colour, op. cit., 38, 42, 45, 46.
- 11. Klein and Jackson, op. cit., 11. Klein, op. cit., 46.
- 12. Klein, op. cit., 47. Anna Christophersen, *Cloths Chosen by the Couturiers*, The Scotsman, 25 July 1964, Press archive, Bernat Klein Collection, National Museums Scotland.
- 13. Klein and Jackson, op. cit., 11.
- 14. Klein, op. cit., 117.
- 15. Ibid., 118.
- 16. Ibid., 117.
- 17. Sue Prichard, From Couture to Home, 1946–1959, in Tibor Reich: Art of Colour & Texture, ed. S. Reich, Tibor Publishing (London: 2016, 45–88.
- 18. Ibid., 48.
- 19. Klein, op. cit., 115.
- 20. Ibid., 118.
- 21. Klein and Jackson, op. cit., 59
- 22. Canmore https://canmore.org.uk/site/54373/galashiels- king-street-tweed-mill accessed 29 March 2016.
- 23. Klein and Jackson, op. cit., 59
- 24. Ibid.
- 25. Bernat Klein, interviewed by Fiona Anderson, oral history interviews, Galashiels, Scotland, September 2010, Bernat Klein Collection, National Museums Scotland.
- 26. W. Gordon Smith, interview with Bernat Klein, Design Matters, BBC Scotland, 1973, Bernat Klein Collection, National Museums Scotland.
- 27. Ibid.
- 28. Wool Counterpoint, *Adventure in Colour*, Winter 1962–1963, Press archive, Bernat Klein Collection, National Museums Scotland.
- 29. Klein and Jackson, op. cit., 12.
- 30. Ibid.
- 31. Jacqueline Field, *Bernat Klein's Couture Tweeds: Colour and Fabric Innovation, 1960–1980*, Dress: The Journal of the Costume Society of America, 33, no. 1: 41–55.
- 32. Field, op. cit.

- 33. Press archive, Bernat Klein Collection, National Museums Scotland.
- 34. Valerie D. Mendes and Frances M. Hinchcliffe, *Zika and Lida Ascher: fabric, art, fashion*. London: V&A Publishing, 1987. Mary Schoeser, Sue Prichard and John Hall, *Tibor Reich: Art of Colour & Texture*. London: Tibor Publishing, 2016.
- 35. Press archive, Bernat Klein Collection, National Museums Scotland.
- 36. Klein and Jackson, op. cit., 37.
- 37. The Scotsman, 150 Guineas For A Tweed Coat, September 1964, Press archive, Bernat Klein Collection, National Museums Scotland.
- 38. Hepworth Show, *Men's Fashions for the Future*, 9 September 1964, Press archive, Bernat Klein Collection, National Museums Scotland.
- 39. Press archive, Bernat Klein Collection, National Museums Scotland.
- 40. Klein and Jackson, op. cit., 17.
- 41. These include Margo Fabrics in Gateshead, British Enkalon, Svenmill in Cape Town, Fiedler Fabrics in Copenhagen, I.R.A in Denmark and the Mohair Board of South Africa in Cape Town. During this phase of his career Klein also designed a colour co-ordinated furnishing scheme for the Department of the Environment in 1974.
- 42. Klein and Jackson, op. cit., 19-20.
- 43. *Evening Standard*, Terlenka Space Spectacular, 30 September 1969, Press archive, Bernat Klein Collection, National Museums Scotland.
- 44. Field, op. cit.
- 45. Lesley. Jackson, *Alastair Morton and Edinburgh Weavers: Visionary Textiles and Modern Art.* London: V&A Publishing, 2012. Geoffrey Rayner, *Artists' Textiles in Britain, 1945–1970: a Democratic Art.* Woodbridge, Suffolk: Antique Collectors' Club, 2003. Mendes and Hinchcliffe, op. cit.
- 46. Klein and Jackson, op. cit., 20.
- 47. Klein and Anderson, oral history interviews, op. cit. 48 Ibid.
- 49. Rolf G. Kuehni and Andreas Schwarz, *Color Ordered: A Survey of Color Order Systems from Antiquity to the Present* (Oxford: Oxford University Press, 2008), 111.
- 50. See footnote 42.
- 51. Klein and Jackson, op. cit., 20.
- 52 Klein and Jackson, op. cit., 21.
- Fig 1. Painting entitled *Tulip*. Oil on canvas. By Bernat Klein, Galashiels, Scotland, 1962. Bernat Klein collection, National Museums Scotland.
- Fig 2. Sample book page containing space-dyed mohair yarn attached to black card, annotated with colour reference number. Designed by Bernat Klein, dyed by Kemp Blair & Co. 1981. Bernat Klein collection, National Museums Scotland.
- Fig 3. Colour board consisting of a hardboard base covered with black cardboard with 140 oval holes for arranging cards of brushed space-dyed mohair. Designed and made by Bernat Klein, Galashiels, Scotland, c. 1960 to 1973. Bernat Klein collection, National Museums Scotland.
- Fig 4. Sample of woven women's fashion fabric entitled *Trefoil*, double cloth hopsack fabric, woven in brushed

space- dyed mohair, gimped wool, velour ribbon, and polyester yarns, also known as *velvet tweed*. Designed by Bernat Klein, Galashiels, Scotland, c. 1965. Bernat Klein collection, National Museums Scotland.

Fig 5. Sample of woven women's fashion fabric entitled *Maple*, double cloth, houndstooth fabric woven in multiply wool slub and space- dyed brushed mohair (face of sample) and worsted and polyester yarn (back of sample). Designed by Bernat Klein, Galashiels, Scotland, 1964. Bernat Klein collection, National Museums Scotland.

Fig 6. Sample of woven men's fashion fabric, plain weave fabric, woven in space- dyed wool yarns. Designed by Bernat Klein, Galashiels, Scotland, 1960–1966. Bernat Klein collection, National Museums Scotland. Reproduced with permission from National Museums Scotland.

Fig 7. Left image: correspondence folder containing a sample of screen printed knitted polyester and painted paper colour samples, with handwritten correspondence addressed to Mr Imber, detailing colour changes. By Bernat Klein, Galashiels, Scotland, 20 January 1973. Right image: print development folder containing a sample of screen printed knitted polyester and samples of polyester and painted paper colour samples mounted on card with handwritten annotations. Each horizontal row of samples represents a different colour way. Designed by Bernat Klein, Galashiels, Scotland, c. 1973. Bernat Klein collection, National Museums Scotland.