

# SEAMS TO BE MADE: Re-valuing an approach to garment construction

---

Elise Cox

An exegesis submitted to Auckland University of Technology

in partial fulfilment of

the requirements for the degree of

Master of Art and Design (MA&D)

2013

School of Art and Design

## CONTENTS

LIST OF FIGURES .....	ii
ATTESTATION OF AUTHORSHIP .....	iv
ACKNOWLEDGEMENTS .....	v
ABSTRACT .....	vi
INTRODUCTION .....	8
CHAPTER ONE – Setting the scene.....	10
Aesthetic and functional implications of a fast fashion approach.....	10
A vintage approach as comparative reference .....	11
Comparing approaches .....	11
CHAPTER TWO – Uncovering the effects .....	13
The effects of compartmentalised production on appearance and fit.....	14
Implications of cost cutting on fabric quality .....	14
Consequences of reduced stabilisation.....	15
Primary research example of oversimplification .....	16
Implications of lost methods and techniques .....	17
CHAPTER THREE – Revealing a valuable relationship .....	18
Remaking to experience the approach .....	19
Coat as garment of choice .....	20
Testing a vintage approach .....	23
Implications .....	24
CHAPTER FOUR – Processes and methods.....	25
Initial pattern selection .....	25
Use of fit testing to refine research parameters.....	26
Understanding Body planes in relation to seam placement... ..	26
Evidence based Final pattern selection.....	27
Drawing process for visualisation.....	28
Paper toile as a process of ease identification .....	28
Initial fabric prototyping.....	29
Wool prototyping to refine structure.....	29
CHAPTER FIVE – An approach embodied in practice .....	30
The one seam coat as exemplar of minimum force .....	31
The elbow seam coat’s arm articulation .....	33
The cut in gusset coat as a simple ergonomic relationship ....	35
The split panel coat as it negotiates form and function.....	37
The squared yoke coat’s simple shoulder stability .....	39
The continuous pointed yoke coat’s version of simplicity .....	41
The half raglan coat’s upper body seam articulation .....	43
CHAPTER SIX – The final coats.....	45
CONCLUSION .....	55
GLOSSARY .....	57
REFERENCES .....	59

## LIST OF FIGURES

Figure 1. Sleeve insertion methods.....	14
Figure 2. Close up of waist intersection (bodice to <i>skirt</i> ). .....	15
Figure 3. Coat, back view. ....	16
Figure 4. Coat seated view. ....	16
Figure 5. Eljay wool coat. ....	18
Figure 6. Original Perrin designed coat.....	20
Figure 7. Re-made version of Perrin coat. ....	20
Figure 8. Internal details of the original Perrin coat. ....	20
Figure 9. Sleeve without gusset. ....	21
Figure 10. Sleeve with separate gusset.....	21
Figure 11. Sleeve with panel gusset.....	21
Figure 12. Close fitting sleeve with cut in gusset. ....	21
Figure 13. Kimono sleeve pattern. ....	22
Figure 14. Coat sleeve seam. ....	23
Figure 15. Corner preparation. ....	23
Figure 16. Jumped seam intersection. ....	23
Figure 17. Initial pattern selection line up. ....	25
Figure 18. Live fit testing. ....	26
Figure 19. Body plane identification diagram. ....	26
Figure 20. Final pattern selection. ....	27
Figure 21. Drawings.....	28

Figure 22. Paper <i>toile</i> . ....	28
Figure 23. Calico <i>toile</i> process.....	29
Figure 24. One seam coat pattern. ....	31
Figure 25. Paper <i>toile</i> maquette. ....	31
Figure 26. Working drawing. ....	31
Figure 27. Calico <i>toile</i> . ....	32
Figure 28. Wool <i>toile</i> . ....	32
Figure 29. Elbow seam coat pattern. ....	33
Figure 30. Paper <i>toile</i> . ....	33
Figure 31. Working drawing. ....	33
Figure 32. Calico <i>toile</i> . ....	34
Figure 33. Wool <i>toile</i> . ....	34
Figure 34. Cut in gusset pattern. ....	35
Figure 35. Paper <i>toile</i> . ....	35
Figure 36. Working drawing. ....	35
Figure 37. Calico <i>toile</i> . ....	36
Figure 38. Wool <i>toile</i> . ....	36
Figure 39. Panels and splits coat pattern.....	37
Figure 40. Paper <i>toile</i> . ....	37
Figure 41. Working drawing. ....	37
Figure 42. Calico <i>toile</i> . ....	38
Figure 43. Wool <i>toile</i> . ....	38
Figure 44. Darted yoke coat pattern .....	39

Figure 45. Paper <i>toile</i> .....	39	Figure 68.....	52
Figure 46. Working drawing.....	39	Figure 69.....	53
Figure 47. Calico <i>toile</i> .....	40	Figure 70.....	53
Figure 48. Wool <i>toile</i> .....	40	Figure 71.....	54
Figure 49. Yoke and pivot coat pattern.....	41	Figure 72.....	54
Figure 50. Paper <i>toile</i> .....	41		
Figure 51. Working drawing.....	41		
Figure 52. Calico <i>toile</i> .....	42		
Figure 53. Wool <i>toile</i> .....	42		
Figure 54. Half raglan coat pattern.....	43		
Figure 55. Paper <i>toile</i> .....	43		
Figure 56. Working drawing.....	43		
Figure 57. Calico <i>toile</i> .....	44		
Figure 58. Wool <i>toile</i> .....	44		
Figure 59. Final Coats in Motion .....	46		
Figure 60. Final Coats in Motion .....	47		
Figure 61.....	48		
Figure 62.....	49		
Figure 63.....	49		
Figure 64.....	50		
Figure 65.....	51		
Figure 66.....	51		
Figure 67.....	52		

## ATTESTATION OF AUTHORSHIP

I hereby declare that this submission is my own work and that, to the best of my knowledge and belief, it contains no material previously published or written by another person (except where explicitly defined in the acknowledgements), nor material which to a substantial extent has been submitted for the award of any other degree or diploma of a university or other institution of higher learning.

November 2013

## ACKNOWLEDGEMENTS

First I wish to acknowledge my creative and practical parents, who have bestowed fundamental values on me of respect for machinery, materials, and making.

Equally, my respect and gratitude goes to my supervisors Dale Fitchett and Kim Fraser for their support and guidance.

To my colleagues, thank you for generously sharing your knowledge, expertise, encouragement and kindnesses. Special thanks go to Mandy Smith, Bev Furniss, Yvonne Stewart, Ann Poulsen and Ineke Creeze.

Many thanks to Annette Sachtleben and Sue Knox for editorial, formatting, and proofing expertise, also Calum Buchanan for photography, and to Sidonie Jago and Nicola Irving for performing as models.

My thanks to AUT for the opportunity to complete this programme of study.

## ABSTRACT

### SEAMS TO BE MADE:

#### Re-valuing an approach to garment construction

The aim of this practice-based research is to examine the value of a traditional approach to garment construction. It is an enquiry in response to a gradual loss of sensibility within the discipline of garment manufacture. This shift, in the present context of fast fashion's increasing dominance, has resulted in homogenisation of both processes and garment appearances, where quality of materials and time are streamlined for cost efficiency.

This project investigates the implications of this homogenisation on the wearer-garment relationship. The research engages the craftsman-like methods of a more traditional approach in order to locate advantageous points of difference, seeking to distinguish subtleties between garment function, shape and material qualities in relation to body fit and construction techniques. The focus of the research is to uncover the value of currently under-utilised traditional approaches by examining materials and methods to offer a more sympathetic ease-of-wear. A vintage coat structure provides the practical research focus for investigating an improved wearer-garment relationship. The knowledge gained will add to the wider discussion regarding the value of fashion production techniques.

“A robot may bring a stiff fender to a hard chassis, but as yet only a human hand can guide two limp pieces of fabric to be machine-sewn together in an arc or a tight corner” (Ross, 2004, p. 2).



## INTRODUCTION

Every garment speaks to me of how it was made and why it was made in that way. I have become tacitly aware of the potentially sympathetic relationship between wearer, materials, construction methods and functionality; noticing fit, fabric and finish often before the fashion statement. This trait lies at the heart of my appreciative understanding of clothes whether or not I have a hand in their production. My practice-based research project is also motivated by my observations and reflections as a maker with experience gained over thirty plus years of garment making. It has evolved as a means of personal reconciliation between witnessed changes in the quality, characteristics and behaviour of contemporary readymade fashion and my professional understanding of garment construction principles. Through this research I have identified an absence of some of these construction principles being applied in the growing fashion genre of women's fast fashion.

This observed absence, based on my industry experience has implications in the studio classroom environment and my role as a teacher. Over the last few decades, with the rapid rise of mass produced clothing, fashion design students worldwide have had

unprecedented access to fashion in terms of volume and cost. However, given New Zealand's limited access to an international fashion heritage, it has been difficult to locate quality, traditionally crafted fashion garments to reference. This has led me to question how students might acquire discerning construction knowledge. This sustained exposure to mass produced garments suggests to me that a generational shift in perception has occurred; standardised, oversimplified construction processes have become the accepted norm (Hammond, 2009). This knowledge gap is compounded by New Zealand's geographical distance from fashion's diverse technical heritage, from which students could draw a deeper contextual understanding. This therefore suggests an examination of current and past garment making practices is appropriate and timely, an idea supported by Gabrielli, Baghi, and Codeluppi (2013) that "now the fast fashion phenomenon has been present as a part of individuals' daily lives for some years, the time is ripe for taking a closer look"(p. 206).

It should be noted that it is not my intention to impose a negative value on fast fashion's overarching concepts, processes or garments. Reflective analysis of the shift to streamlined

processing is not directed as criticism. Given the dominant volume of fast fashion garments in the marketplace the research raises questions towards valuing a traditional approach in terms of retrieving a more sympathetic wearer-garment relationship. Consequently the research project has evolved over time as the practice developed appropriate parameters.

This exegesis has six chapters. Chapter One is an overview of aspects of fast and vintage fashion in terms of garment construction. It also establishes an overarching methodology whereby a comparative approach is used to draw out understanding from these different approaches and methods of production. While the decision to look at the vintage era to examine a traditional approach became evident as the project developed, its relevance is briefly outlined here. Chapter Two discusses consequences of streamlining by examining some of fast fashion's construction features and their considered implications. This revealed some of the losses in a contemporary approach and the diminished value of garments. Chapter Three outlines an investigation into a more traditional approach to garment construction. It presents an examination of some vintage garment's qualities and construction methods to identify

the value associated with an approach which constructs a subtle and practical relationship to the body. Chapter Four discusses methods used to investigate the value of a traditional approach to the making process. It traces the progression from pattern selection to final garment with a focus on creating a sympathetic wearer-garment relationship. Chapter Five demonstrates how a traditional approach and methods discussed in the previous chapters were applied to create subtleties of shape and behaviour producing a sympathetic relationship between the wearer and the garment. Chapter Six aims through image and text to reflect on some of the details of behaviour embodied in the final coats that are not discussed elsewhere. The final coats feature a variety of vintage construction techniques that encompass considerations for *ease-of-wear*. The conclusion raises an open-ended question regarding the future implications of a traditional approach in terms of valuing the wearer-garment relationship.

This thesis is comprised of 80% practice based research and 20% exegesis that supports a presentation of live modelled and static garments.

## CHAPTER ONE – Setting the scene

This chapter discusses aspects of fast fashion and vintage approaches to garment construction. As such, it implies a comparative approach for re-examining an alternative attitude to fashion making and raises issues concerning the wearer-garment relationship. It looks at strategies of approach and focus supported by Pookulangara and Shephard's (2013) suggestion that "there is a growth of a new movement counteracting the demand for fast fashion" (p. 200) and that we consider "other core concepts of producing and consuming better" (p. 201).

### **Aesthetic and functional implications of a fast fashion approach**

Gabrielli et al (2013) describe the fast fashion model as "a marketing paradigm offering continual and rapid assortment of fashion clothing at minimum price points" (p. 207). They state "the fashion industry is required to shift the fulcrum of its competitive edge towards the ability to respond quickly and to altering the fashion trends by constantly 'refreshing' their product range" (p. 207). They also note that this approach comprises two fundamental elements: "tight production time frames and trend-driven affordable clothing" (p. 207). This highly

competitive approach to production has emerged over recent decades as a shift that "represents the advent of 'disposable' fashion, which drives the attention from product quality to affordability" (p. 208).

In the context of this project, this can be seen as an ideological shift in focus from quality to quantity where efficient production processes dictate streamlined methods of manufacture. I suggest this shift can infer a trade-off, where more time consuming, varied methods of manufacture and quality of materials can be sacrificed for the benefits of short-life garment wear. As a consequence, such an approach can be seen as planned consumption and disposal, which may, over time, produce a normalised loss of sympathy in the wearer-garment relationship.

There are distinguishing and homogenised construction features as a consequence of a streamlined manufacturing process accompanied by a trade-off and this is supported by Azuma & Fernie's (2003) statement "despite the resultant homogenisation of fashion designs that derives from this phenomenon, the majority of consumers are satisfied with the improved availability of in-vogue fashion at inexpensive prices" (p. 413).

This idea underpins my examination of the value of garment construction in the wearer-garment relationship.

It may seem that fashion's competitive nature is motivated by the idea of continual change, yet escalating turnover of fashion product indicates that fast fashion's dominance in terms of quantity is a result of an ideology more committed to renewal (Loschek, 2009). The difference between change and renewal is an important distinction to make because as Fletcher (2012) states, "there is a need to address a culture of trend driven renewal by offering alternative points of product difference... enhancing wearer experience as a way to raise awareness of fashion production options"(p. 6). This perspective on renewal rather than change and offering points of difference informed my decision-making. It prompted me to examine a number of mass produced garments, re-making them to understand the implications of the construction methods used (discussed in detail later). Consequently as the project developed, I began to consider my practice in terms of retrieval of under-used construction techniques.

### **A vintage approach as comparative reference**

According to Hammond (2009) the era spanning 1940 to 1960 can be identified as a pivotal moment in fashion history when elegant simplicity of form and function were the hallmarks of fashion design. The end of this era coincides with the gradual evolution of fast fashion (Azuma & Fernie, 2003). Jenb (2004) suggests the current rise in popularity for mid-20<sup>th</sup> century fashion or what I will refer to as vintage, reflects a desire for fit and quality of garments distinctive to a vintage approach (also refer McColl, Canning, McBride, Nobbs, & Shearer, 2012). This approach is also marked by closer and more consistent attention to skilled construction detailing for shape. The craftsmanship-like principles belonging to vintage can reveal subtleties of relationships between garment function, shape and materials in relation to the body. I therefore investigated the values of the vintage era to explore and understand a sympathetic wearer-garment relationship in relation to fit, fabric and construction.

### **Comparing approaches**

Comparative analysis is an inductive method I have used to draw out differences between methods and approaches to construction and constructing (Neumann, 1991). It has enabled

magnification and disclosure of hidden construction subtleties inherent in a more traditional approach. Visual, primary research comparisons have been made by examining historical NZ and international fashion from Auckland Museum's collection and NZ Fashion Museum exhibition garments revealing some well-crafted relationships to the body. These were compared to streamlined contemporary versions; the current offerings in local stores. Workroom and studio manuals across a range of decades were also examined in light of comparing shifting production standards and under-used construction methods (Glock & Kunz, 1990 & 2005); and strategic remaking of garments was conducted to compare the behaviour of fabrics and construction methods that offer different fit and finish behaviours. A comparative approach to examining fast and vintage characteristics, allowed my project to develop by demonstrating differences without associations of superiority. It indicated that different materials and methods produced different outcomes in terms of garment appearance, function and behaviour. On reflection, it cast a new way of looking at all construction techniques and materials as they relate to differences of approach. This methodology informed later selection of

materials, styles and construction methods on the basis of garment performance, behaviour and fit guidelines.

## CHAPTER TWO – Uncovering the effects

The aim of this chapter is to discuss the technical behaviour of some of fast fashion's distinguishing features. These will form a point of reference when re-examining construction processes in terms of what may have been lost through the streamlining process.

In order to remain competitive, current fashion production processes must increasingly rely on technological developments for efficiencies. This is because garment assembly continues to rely on unavoidable human involvement, which limits some operational changes (Carr & Latham, 1988). Therefore streamlining for cost efficiency falls to the main variables of time and material costs.

This approach is efficient in terms of mass production, but a relentless culture of incentivised corner cutting and automation has developed oversimplified operations such as minimising fabric yield and *de-skilled* assembly operations in the process. Over recent decades characteristics such as unreliable fit, limited variety of construction methods, low cost materials, and speedy processes have sometimes developed as a manufacturing

standard and therefore have become a signature of the approach. This shift highlights a level of invisibility inherent in the craft of garment making, and suggests changes in methods of manufacture may have gone un-noticed. The unseen nature of construction coupled with the shift in processes has often impacted on the wearer in terms a diminished quality of relationship to fit and ease of wear (see Figures 3 and 4).

A search of contemporary publications including production manuals such as Carr & Latham (2000) and journal articles such as Hayes & Jones (2006) reveals a singular emphasis on implementing cost cutting strategies of standardisation, streamlining and *de-skilling*. Of necessity, the shift to streamlined processes increases the use of limited methods, suggesting a potential loss of useful skills and techniques in the process. A diminished wearer-garment relationship becomes evident when comparing written texts from early and later stages of mass productions evolution such as Solinger (1961 & 1980). However there is little documented evidence on the effect in terms of subtleties lost in the shift to a streamlined approach or the gradual adoption of oversimplified techniques which have resulted in a homogenised fashion aesthetic.

### The effects of compartmentalised production on appearance and fit

Within my practice-based research I identified several fast fashion practices which indicated unsympathetically constructed relationships between wearer, materials, methods and functionality (discussed later). These observations and my professional experience confirmed that the approach to meet cost and time restrictions is defined by separated operations modelled on 1960's automobile industry assembly line methods of *de-skilling* to save time and reduce human error (Kim & Johnson, 2009; Brackelsberg & Marshall 1990). This now internationally accepted practice confines seaming to flattened body planes by keeping seam operations two dimensional for as long as possible, and favouring straight, sequentially captured seams (Carr & Latham, 2000). The overall effect is limited variations in seaming which leads to a prevalence of excessive *positive* or *negative* amounts of *wear ease*. This approach is designed to meet a broad range of fit within a size; however there is a trade-off in terms of a lost fit relationship to the body (see Figure 1). In the range between these fitting extremes lies an area of opportunity to explore subtler shaped, fitted and seamed options. Evidence of a more sensitive approach to fit

with ergonomic *wear ease* can be found in construction books of the 1950's era such as Mansfield (1953) and Bane (1956).

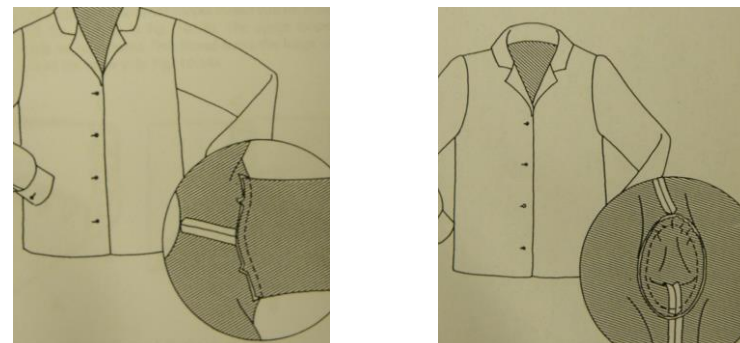


Figure 1. Sleeve insertion methods.

In the example (left) normal arm movement causes unnecessary garment lift due to the seaming order. By capturing sleeve and side body seams last and as one, a line of tension is created down the body. In the more traditional method (right) the order of construction leaves the arm joint seam to last, mitigating the effects of garment lift by placing the line of tension around the arm hole.

Image source; (Carr & Latham 1988)

### Implications of cost cutting on fabric quality

Fabric selection is often determined by cost in relation to performance i.e. return on investment. While woven fabrics can require less construction handling time and their qualities such as wear, serviceability, and tensile memory have an advantage, in a contemporary environment, they hold less favour when compared to the comfort and collapsed drape offered by knits. A dominant presence of knit fabric in the market place can be

attributed to a softer *handle* and greater *positive* and *negative ease* tolerances. While tensile quality of woven allows for a greater variety of *wear ease* volume, limitations of seam placement for separated assembly often means the three-dimensional qualities of woven fabric is overlooked.

The predominant fabric composition in the majority of contemporary garments is polyester. As well as being cheaper to produce than many natural fabrics, a wrinkle resistant characteristic of flat *handle* offers advantages in terms of wearability and serviceability (Schaffer, 2010). This also means speedier production is possible as its inherently incompressible nature is suited to the process of automated flat seam joining. The ubiquitous wrinkle resistant quality of many types of polyester allows time saving techniques such as un-pressed tucks and automated gathering for shape creation. However I suggest it also contributes to a loss of comfort to the wearer when compared to the range of *handle* and manipulation options available to many woven natural fibre fabrics.

### Consequences of reduced stabilisation

Demands for efficiencies of time and material costs have resulted in the use of separated construction tasks standardised

as two-dimensional *de-skilled* operations (Brown & Rice, 1998). As a consequence there tends to be a limited range of construction methods although they often exhibit a high degree of sewn accuracy. However, this accuracy does not always account for the relationship between the wearer and the garment particularly with respect to seam stability and fit. Figure 2 illustrates how a streamlined assembly can undermine traditional principles that support extended wear and comfort.



Figure 2. Close up of waist intersection (bodice to skirt). Despite an accurate alignment and order of assembly, fabric stressors caused by a seam positioned unsympathetically to the body undermine the potential for a stable and durable fit.



A review of several decades' production manuals has produced a list of common garment production concerns. This indicated to me that there once were agreed, fundamental principles applicable to the making of all garments that were open to interpretation depending on the approach taken.

Earlier editions of manuals highlight this contrast of approaches to garment stability by presenting wide-ranging options for seam construction and stability, thereby extending the life of the garment to match the expected purpose and life of the materials. More recent texts emphasise oversimplified approaches to stabilisation which lead to a shorter garment life. It should therefore be noted that garment stability is maintained by using a combination of the concerns listed below:

- a. Fit: balance and ergonomics
- b. Construction: Seam types, allowances, elasticity and durability.
- c. Stabilisation: materials and techniques
- d. Fabric: structure and composition in relation to performance.

(Lowe & Lowcock, 1975; Mehta, 1985; Romeo, 1988).

### Primary research example of oversimplification

To understand the impact of oversimplification in mass produced garments with respect to stabilisation methods, materials and ergonomics in the wearer -garment relationship, I examined a current season's (Winter 2013) coat (see Figures 3 and 4).



Figure 3. Coat, back view. *Wear ease* over the shoulder blades is insufficient to allow *ease-of-wear* for normal arms' reach. Pleat function is limited by the polyesters inherent resistance to manipulation. The pleat folds are heavily overstitched, forcing the pleats into compliance which reinforces the close shoulder fit. .

Figure 4. Coat seated view. Seated position shows collar and shoulders lifting off the body due to an over fitted torso pushing up the *armscye* also accentuated by shoulder pads

As a protective over-garment the coat carries a historical association of long-term wearability. It seems that the majority of contemporary coats are not manufactured for this as a primary consideration or capability. The images (Figures 3 and 4) demonstrate the shifting emphasis to short-term consumption in terms of:

- a. Fit: although labeled the correct size for the *fit model*, a meagre fit means that the collar and reverse area lift and distort with normal seating and reaching movements. Minimal ease over shoulder blades, sleeve head and torso cause shoulder pads to lift with forward arm movement.
- b. Construction: Buttons attached upside down and un-shanked causes unnecessary wear to buttonhole and front surface. A button positioned too close to the edge accentuates meagre depth of a lap, creating an over fitted appearance. Hem tacks accurately placed but under-engineered in function. Minimal seam allowances throughout exclude practical possibilities of alteration.
- c. Stabilisation: *fusible* non-woven interfacing used in facings and pocket flaps only. None present in hems or back and shoulder seams which are subject to stress from excessive stretching due to meagre wear ease.
- d. Fabric: Use of polyester fabric requires substantial topstitching to control edges of belt and collar to prevent the pleat opening out. Fabric has a soft but incompressible *handle*, evident in the creasing.

### Implications of lost methods and techniques

My examination of this coat and other contemporary examples suggests a loss of regard for a consistently sympathetic wearer-garment relationship. As a result a diminished intrinsic value is revealed in many garments which doesn't inspire preservation. It appears that long-term wear is neither the designed intention nor a motivation for purchase. This examination of the effects of oversimplified construction methods suggested there was a need to gain an understanding of the inherent value embodied by a more traditional approach to garment construction.

### CHAPTER THREE – Revealing a valuable relationship

This chapter outlines an investigation into a more traditional approach to garment construction. It presents an examination of vintage garment's qualities and construction methods to identify the value associated with an approach which constructs a subtle and practical relationship to the body.

A vintage approach offers an opportunity to uncover a more sympathetic relationship between the wearer and the garment by virtue of an all-inclusive regard for fit, materials and construction methods. As pointed out by Hammond (2009), Lloyd-Jenkins (2012) and de Pont (2010), early New Zealand fashion designers reflected this sensibility and respect for materials, methods and the wearer in their designs during the 1950's and 1960's and while they don't discuss this sensibility in depth, their statements are supported by my primary research. Fashion exhibitions such as 'Babs Radon' (2009) at the Napier museum and 'Eljay' at the Gus Fisher gallery in Auckland (2010) allowed me to observe alternative and sympathetic seam positions for fit and *ease-of-wear*. Also evident was fabric selection with qualities of long wear and compliant *handle* (see

Figure 5). These observations showed a fundamental difference between approaches with respect to the wearers' comfort.



Figure 5. Eljay wool coat.

Image source; Regnault, C. (2010). *Farewell to a stylish and generous man*. <http://blog.tepapa.govt.nz/2010/07/30/a-farewell-to-a-stylish-and-generous-man/>. Reprinted with permission GH016188

Shoulder seams follow the natural dimensions of the *shoulder crown*, allowing the arm to move freely with minimal garment lift

### Remaking to experience the approach

During my early making phase and in light of my analysis of primary research (see p. 16), I re-made an example of NZ designer Perrin McCloud 1968 coat to test and understand the implications of vintage methods (see Figures 6 and 7). My intention was also to clarify distinctions between approaches during the making process by re-examining fit and fabric behaviour in relation to the wearer. During the process I disassembled the original coat to take notice of traditional construction features (see Figure 8). For the re-make I eliminated unnecessary detailing while adding ease to improve fit and increase stability over the shoulder region as the balance of the original garment fell to the back. Comparison of original and re-made versions revealed little difference in overall appearance and body fit, highlighting the inherently invisible nature of construction techniques (see items a. to b. following). While the overall effect of re-making was limited it prompted me to reflect on the relationship between vintage techniques and seam positions to create more distinctive seam stability and alternative shaping options.

- a. Fit: Perrin's approach was traditional in generosity of fabric, balanced fit, well-eased sleeves and ample stride room. Alterations to shoulder ease improved the fit without visible change.
- b. Construction: Hidden hand worked detailing such as clipped wide seam allowances to ensure smooth flexible curves reflected an intention for garment longevity. However, the coat's simple structure of fronts, back and sleeves could not take advantage of the scope that vintage techniques could offer.
- c. Stabilisation: The same lack of discernible difference was produced despite using *fusible* interfacing for the re-make.
- d. Fabric: the original wool *handle* had softened with age; for the remake I selected a medium weight flannel to mimic the originals' quality.



Figure 6.  
Original Perrin designed coat



Figure 7.  
Re-made version of Perrin coat.



Figure 8. Internal details of the original Perrin coat. Initial dismantling revealed distinctive vintage details: wide, open, clipped seam allowances; moulding; lined sleeve heads and stitched lining insertion. Full dismantling to retrieve the patterns proportions revealed an absence of shoulder seam ease.

### Coat as garment of choice

As a result of the comparative analysis of approaches and techniques and the remaking of a number of garments, it became clear that the coat was as an appropriate garment to investigate the value of a traditional vintage approach. The essential common requirements of all coats with respect to functional shape, *ease-of-wear* and purpose as an over garment served as an appropriate focus to discuss points of difference between shared elements of sleeves, front opening, collar and pockets in relation to body fit. To function with greater sensitivity to a moving body, fit should be generous for *ease-of-wear*.

I also identified that the garment should have a secure shoulder girdle to maintain balance. Comparing these aspects of construction revealed that sleeve and shoulder structures were crucial to overall stability. The currently ubiquitous separate sleeve of the fast fashion approach (as used on the Perrin coat and its re-make; see Figure 6) is restrictive in appearance and ergonomic function when compared to the variety of comfortable fit and proportion options afforded by other traditional options.

To inform my studio practice, I applied Sennett's (2008) principle of doing no more than necessary to achieve the best functional performance while making the most of material qualities. This allowed me to explore the more sympathetic fit options of a kimono sleeve. The main construction feature of a kimono sleeve is the elimination of the upper *armscye* seam over the *shoulder crown*. Absence of this seam means increased potential exists for manipulating *wear ease* on the *sagittal* plane (see Figure 19). Shifted seam configuration in this manner can create distinctive full shoulder girdle ergonomics and subtleties of fit by using corners, gussets and seam ease techniques (Melliar, 1968) (see Figures 10–13).

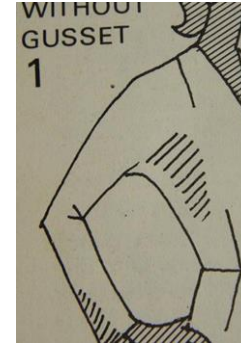


Figure 9. Sleeve without gusset. The garment body extending into the sleeve variation offers the greatest amount of *wear ease* with the least opportunity to create shape.

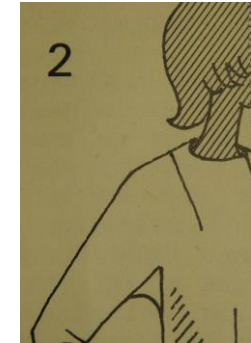


Figure 10. Sleeve with separate gusset. A bias insert gusset creates a closer fit while retaining comfortable arms reach.



Figure 11. Sleeve with panel gusset. This version is positioned to cross *frontal* planes and at the same time efficiently targets shaping over arm and shoulder curvatures.

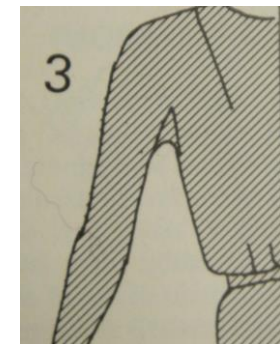


Figure 12. Close fitting sleeve with cut in gusset. Positioned high into the *frontal* planes means the bias cut insert allows maximum arms' reach while maintaining a well-fitted silhouette.

Image source; Melliar, M. (1968).



This analysis and reflection on the importance of shoulder stability in the coat and kimono sleeve informed my decision to select a simple 'A' line silhouette for further studio experimentation (see Figure 9). This garment's accommodation of efficient *ease-of-wear* (Anderson, 2012) informed my studio practice by directing attention to exploring ergonomically positioned seam options and suitable fit tolerances. Examination of this silhouette re-confirmed the importance of shoulder girdle stability for the entire garment. It also revealed distinctive characteristics of vintage garment cut and construction in relation to wearer comfort. This was most evident when the major body shaping seam bisected a body plane as the straight of grain could then maintain optimal wearer comfort and stability over the shoulders

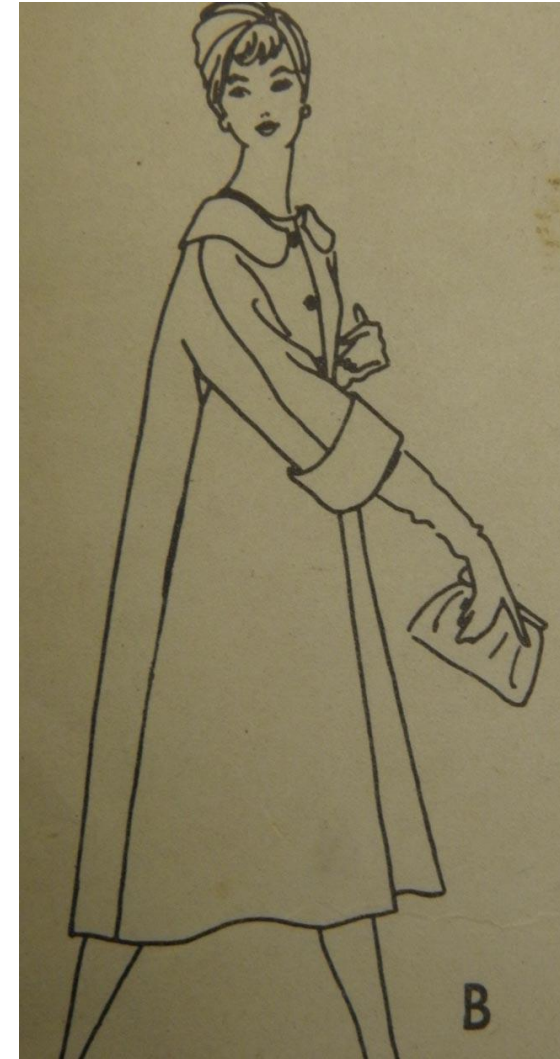


Figure 13. Kimono sleeve pattern. Vogue pattern illustration 1958, This kimono sleeved basic coat pattern was used as the fundamental shape reference to establish parameters of balance, fit and *wear ease* during the selection and making of subsequent prototypes.

### Testing a vintage approach

Sennett's (2008) views on craftsmanship informed my decision-making surrounding selection and practical application of construction techniques. In order to test the practicalities of these discoveries of a traditional approach I made a coat with an extended sleeve (see Figure 14). The overarching idea of most gain for least damage also required testing of suitable stabilisation methods in terms of managing fabric properties in relation to the garment's use and purpose. To ensure reliable and long-term garment stability I adapted a vintage method (Gurney 1939) of stabilising the stress points of internal corners to spread and sensitively control tension over the seams and intersections, evenly supporting the qualities of the fabric (see Figure 14).

It should be noted that it is not my intention to limit construction and stabilisation methods to a vintage era. While techniques such as seam allowance replacement at corners (see Figure 15) and *jumped* seam intersections (see Figure 16) are vintage in origin I have also elected to take advantage of technological advances. For example, I have incorporated in this and the coats

in the final collection, a variety of *fusible* interfacing used in contemporary manufacture into my making process.



Figure 14. Coat sleeve seam.

Ensuring the corner is smooth and well-stabilised requires a vintage technique of seam replacement for the corner before joining to the point.



Figure 15.  
Corner preparation.



Figure 16.  
Jumped seam intersection.



The original fabric of vintage 1950s coats was woven wool in a variety of weights and weaves. I have elected in this coat and all others, to continue the tradition in consideration of the wearer because, as Shaeffer (2010) states, “wool is more comfortable in all climates than any other fabric” (p. 61). In addition, a woven structure’s tensile and draping qualities in the presence of generous *wear ease* bring greater shaping opportunities to the wearer-garment relationship over the collapsible nature of a knit structure. Wool’s inherent nature offers the benefits of compliant *handle* and drape, *loft* and textural variation, and wrinkle and water resistance. It is available in a range of weights and textures, and has natural insulation properties associated with a coat’s function as an over-garment. These fabric qualities reflect well-known advantages of behaviour and performance when partnered with vintage construction techniques such as smooth pivots and seam ease that are not as available to polyester fabric.

## Implications

The completion of these coats and the previous research to date suggests some vintage construction methods have aesthetic and behavioural advantages in terms of *ease-of-wear*. They indicate valuable possibilities associated with dimensional seaming and skilled construction when compared to the contemporary practice of flat plane joining. There is a proven history of performance and behaviour associated with vintage that is highlighted by the craftsmanship-like approach of using a best match of stabilisation technique to the expected life of the materials. Fletcher (2012) states that “durability, while facilitated by materials, design and construction, is determined by an ideology of use” (p. 222). Therefore I suggest there is value in retrieving a wearer-garment relationship when based on a traditional ideology where garment longevity is a consideration.

## CHAPTER FOUR – Processes and methods

This chapter discusses methods used to investigate the value of a traditional approach to the making process. It traces the progression from pattern selection to final garment with a focus on creating a sympathetic wearer-garment relationship.

In fashion terms, human physiology remains unchanged; the moving body is the reference point determining all levels of sympathetic garment fit. As outlined in the previous discussions I have suggested that considerations of functionality, materials, and methods of manufacture regulate the quality of this relationship between the body and the garment.

During examination of the value of these fundamental elements in my studio practice I followed a logical order in the garment making process, where an integral part of my critique process included iterated reflection and analysis during and after each stage.

### Initial pattern selection



Figure 17. Initial pattern selection line up.

After analysis, patterns at top left and bottom right were initially selected for their distinctive vintage seam position and shape creating simplicity in relation to the body's normal range of movement.

As I am not a patternmaker I began a search for suitable readymade patterns. The continued popularity of vintage sewing patterns (Cassidy & Bennett, 2012) reinforced their intrinsic and relevant value and use as project samples. Their selection was informed by Sennett's (2008) concept of 'do no more than necessary' as I chose a range of front opening vintage coat silhouettes with distinctively dimensional seam placements. During reflective analysis I needed to set aside assumptions that the original pattern fit and finish was inherently optimal in order

to develop criteria for evaluation. Through the first calico *toile* fitting process, I considered elements that might be improved by alteration to increase ergonomic function. Several styles were found to be inadequate, and eliminated due to their uncomfortable seam placement and excessive *design ease*. Some were altered to refine for simplicity and variety of ergonomic seaming.

### Use of fit testing to refine research parameters



Figure 18. Live fit testing.  
The point of least resistance was found by altering the fit off the body to a point where draglines were minimised when reaching forward, seated and walking.

This pattern refinement process informed the setting of fit testing parameters whereby wearer comfort was monitored in relation to the garment's functional *wear ease* rather than the excesses of *design ease*. This added criteria then served as a guide to identify each garment's optimal proportions. In

response to an aim for optimal garment comfort by doing no more than necessary, three active body positions relating to the coat's functional expectations were tested as reference points; forward arm's reach, seated position and allowance for full stride room (Figure 18). Photographic recording of this live process provided the data to re-*toile* where necessary to refine seam placement with least fabric resistance for optimal fit.

### Understanding Body planes in relation to seam placement

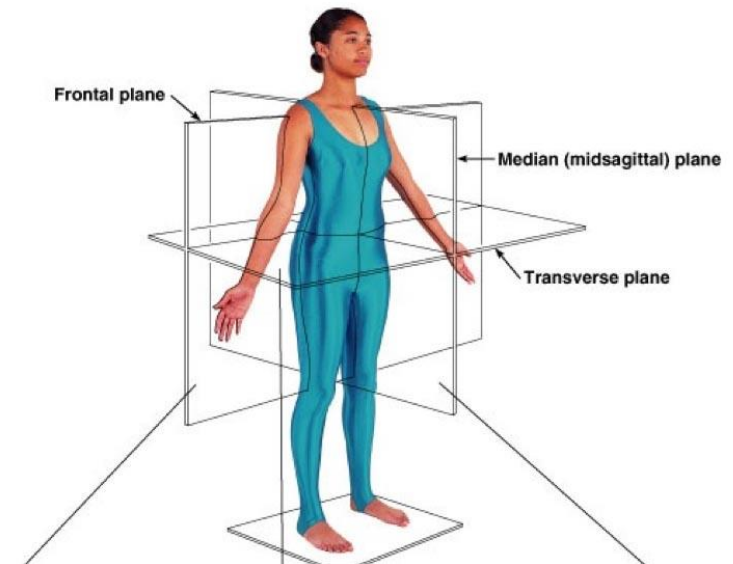


Figure 19. Body plane identification diagram.

Malouff.(2012). *Malouff's anatomy and physiology blog*.  
<http://malouffsaandpblog.wordpress.com/2012/10/10/becoming-oriented-with-the-human-body/>

The fit test model at this stage in the project was a critical development as it revealed seams crossing *frontal* and *sagittal* body planes (Figure 19) at strategic places had the potential to create subtle, functional structure and fit around the body while delivering the required balance and stability. Identifying these planes revealed alternative reference points in terms of seam placement and configuration with respect to a distinctively vintage wearer-garment relationship.

### Evidence based Final pattern selection

The first test fitting stage necessitated a re-appraisal of the collected patterns in order to define my selection criteria. A focussed and detailed examination of each coat's structural seam and shaping permutations enabled elimination of repetition of constructed seam shaping options. By working in this way the final pattern selection (see Figure 20) criteria was distilled to four elements in relation to functional shape, fit, construction, and materials.

- (a) Coat silhouette with kimono sleeve variations, shaped to anticipate: comfortable arm's reach, waist flexion and full stride room.

- (b) Over-engineered, practical fit allowances to achieve *ease-of-wear* with least disruption to moving silhouette.
- (c) Insertions, extensions, and pivots strategically positioned to allow necessary creative, ergonomic crossing of body planes.
- (d) Wool fabric for coat outer with sleeve and hem length proportions informed by fabric qualities and functional considerations.



Figure 20. Final pattern selection.

A review of pattern selection criteria refined the final choices to garments to seven in order to demonstrate the value of a wide variety of seaming and shaping scenarios

## Drawing process for visualisation

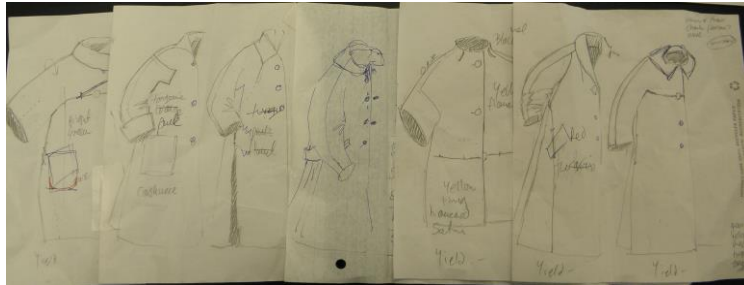


Figure 21. Drawings.

The drawing process enabled immediate visualisation of realistic scale and proportion.

The original pattern illustrations depicted unrealistic body proportions in the stylised fashion aesthetic of their era. In order to review the coat's structure, scale and proportion I elected to visualise them as sketches to get a more 'true to life' impression of scale and proportion (see Figure 21). The sketching process allowed me to highlight the potential for targeted shape behaviour in the way pattern shapes angled off the body at seamed articulation points. This then prompted me to use a traditional paper *toile* process to view the effect in three dimensions before re-toiling in fabric (Bishop, 1959).

## Paper toile as a process of ease identification



Figure 22. Paper *toile*.

This process enabled me to examine and compare degrees of wear ease, identifying it as different to design ease.

Paper *toiles* using the original patterns' size and seam configuration were assembled initially to establish a baseline reference. The advantages of this method became immediately evident when planar qualities of the paper accentuated the body planes (see Figure 22). This created static space over the body in a visible manner not possible with fabric, and allowed *on-the-stand* adjustments to be trialled. Corrections to balance seam position, fit and construction features such as gussets and inserts were applied directly to the paper patterns while negotiating the amount and distribution of ease over the entire garment. In this way, the method identified crucial fitting axes at the neck and under the arms as a focus for attention during the next *toile* stage.

### Initial fabric prototyping



Figure 23. Calico *toile* process.

As a development from the static paper *toile* process, calico iterations with adaptations were assembled that met the final selection criteria for re-testing in terms of fit, gravitational balance, and seam ergonomics on a moving body (see Figure 23).

The *fit models* were consulted on garment comfort during activity and balance was monitored during a process that required reaching the arms forward, walking and sitting. Thus I could identify which fabric stressors to resolve. The *fit models'* responses informed further alterations to *toiles* and an ideal fit was defined as a point between least resistance and excessive ease. Fit testing also revealed the lower *armscye* position as crucial to maintaining garment stability. Kimono sleeve seaming

does not hang from a seamed shoulder point; therefore garment stability relies on strategic seaming for structural support. Seams circumnavigating the shoulder girdle provide this, highlighting the importance of their configuration in relation to the wearer's comfort. On reflection, repeating the calico *toile* process to test each garment's progress against criteria of fit and finish provided the time needed to question and evaluate the value of a sympathetic wearer-garment relationship before proceeding to the wool *toiles*.

### Wool prototyping to refine structure

This last *toile* stage brought the advantages of woven wool fabrics into play. Wool's unique material properties of manipulation drape and *handle* were trialled in relation to each garment's fit, scale and proportion. This eliminated uncertainty when all the final elements of the coats were combined. A uniform grey medium weight flannel was used for all *toiles* so that a basis for comparison could be established from which to make appropriate decisions on final weight and weave for each coat. The fabric's horizontal stripe advantageously provided a constant reference of the grain line in relation to garment balance.

## CHAPTER FIVE – An approach embodied in practice

This chapter demonstrates how the vintage approach and methods discussed in the previous chapters were applied to create subtleties of shape and behaviour producing a sympathetic relationship between the wearer and the garment. The completed coats gather some vintage construction methods and considerations to reflect on the value of these techniques.

A discussion of the making process for each coat includes images of the stages, discussion of fit and ergonomic behaviour, construction stability and fabric selection. Additionally, three construction features are common to all the coats exhibited: fully bagged linings closely support the fit of the shells by replicating the outer shell seam lines. Hems are secured

discreetly to the seam allowances. This creates a permanently smooth front hem closure as well as options for length alteration. All buttons are positioned adhering to traditional principles of placement in relation to full functionality of closure.



## The one seam coat as exemplar of minimum force

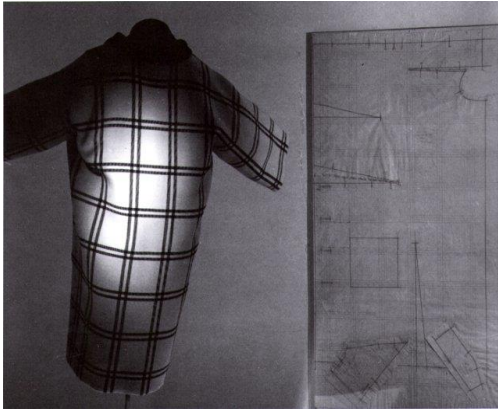


Figure 24. One seam coat pattern.

This style references an original 1952 Cristobal Balenciaga design, chosen for its functional simplicity of shape on the body. Folds and minimum seaming create a basic three-dimensional structure. Ergonomically placed darts and inserts add dimension to create generous *wear ease* on the body. It features complex intersections that required careful resolution.

Image source: Metropolitan Museum, New York.



Figure 25. Paper *toile* maquette.

This pattern was reconstructed from the background wall image in Figure 22 as a paper maquette. Folds along the *sagittal* planes for shoulder and side, shift the seam configuration to front and back. This allows fabric to cross over three body planes, therefore requiring a *whole garment* assembly process. The *all-in-one* cut alerted me to a slim seam allowance in the stress points of the side to sleeve intersection, indicating a need to resolve any weakness in relation to fit.

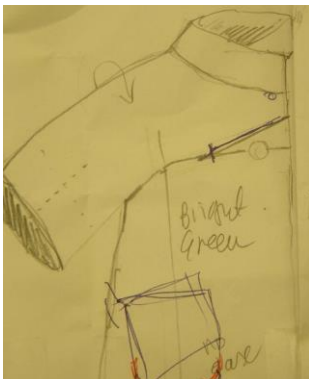


Figure 26. Working drawing.

Through the maquette and drawing processes I identified that insert proportions regulated the degree of forward sleeve pitch. Therefore adjusting proportions to the horizontal seaming created an opportunity to combine well positioned *in seam* buttonholes with an upright, *banded* collar to fit. Options for additional buttonholes and pockets were identified for later consideration.





Figure 27. Calico *toile*.

Refining proportions for *ease-of-wear* involved shifting the sleeve intersection closer to the body to eliminate *draglines*. Body dart lengths were determined relative to the least amount of fabric distortion while accommodating generous elbow and knee flexion. In the absence of side and shoulder seams overall garment balance relied on re-positioning the neck opening in proportion to the weight between front and back in order to maintain a horizontal hemline.



Figure 28. Wool *toile*.

The added collar was tested for proportions of comfort and the degree of stability added to the shoulder region to maintain the garment's balance. The *toile* fabric's medium weight created an excessive degree of collapse over the entire silhouette; therefore a firmer weave with greater *loft* was sourced to support the garment's simplicity of shape. *In-seam* buttonholes were incorporated in the chest seams.

## The elbow seam coat's arm articulation



Figure 29. Elbow seam coat pattern.

Also derived from Balenciaga and dated 1954, this style applies the same principle as the previous coat of crossing body planes without a seam but behaves differently because of different seam locations on the body. The top shoulder seam diverts to extend over the forearm allowing the opportunity for negative shaping at the crook; the lower arm is then pushed partially forward to anticipate elbow flexion.



Figure 30. Paper *toile*.

The paper *toile* reveals how a *wind* in the arm seam works to pitch the sleeve forward; it mimics the arms forward motion while incorporating ease from across the shoulders. This effective use of minimal seaming captures the shape of arm articulation to anticipate full *ease-of-wear* function.



Figure 31. Working drawing.

The original pattern did not include a collar; this offered an opportunity to increase shoulder stability with a suitable finish for simplicity. Sketching allowed visualisation of collar treatments to take advantage of the neck planes. I therefore chose to *grow* on a proportional collar from the *frontal* body planes.



Figure 32. Calico *toile*.

For this style the neck dart positions, collar height, sleeve and hem proportions and final silhouette were determined by a trial and error fit test. The *toile* identified two areas with stabilisation concerns; the pivot and the sleeve to body intersection. Weak joins were resolved by seam allowance replacement and *seam jumping* methods respectively (refer to page 16).



Figure 33. Wool *toile*.

*Melton* weight flannel fabric was selected to support the architectural quality of the silhouette. Sleeve facings with the lightest possible interfacings were added to reduce bulk from the forearm dart and to stabilise a defined sleeve opening.

## The cut in gusset coat as a simple ergonomic relationship



Figure 34. Cut in gusset pattern.

This original, unused 1949 French pattern features a *cut in* gusset positioned to maintain good arm articulation (see Figure 12 on page 21). A half belt centred close to the back waist efficiently draws in the waist while providing generous stride room. Sleeves are slightly ballooned in silhouette to anticipate elbow flexion.



Figure 35. Paper *toile*.

The simple front shoulder *dart intakes* lift the *frontal* plane to allow leg stride room with minimum distortion of the silhouette. The darts also lift the side seams to tuck closer to the body. Gusset shapes are curved to mimic the lower *armscye* and cut into the *frontal* plane to create *Pli-de-souplesse* for *ease-of-wear* and shoulder stability.

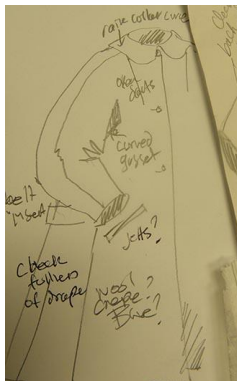


Figure 36. Working drawing.

The sketch developed a more realistic silhouette to inform my decisions on possible collar and pocket alterations. The process also alerted me to a stability issue with the half belt, as it was not positioned into the side seam. Several construction options were considered before this was resolved in the final garment.

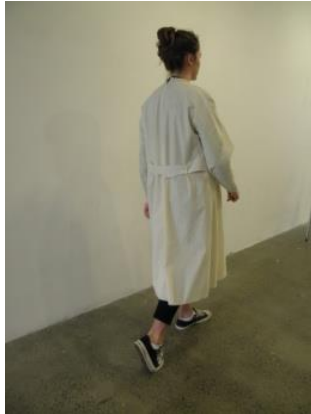


Figure 37. Calico *toile*.

The fit test in calico fabric revealed a need for an alteration to increase neck size to improve the shoulder girdles stability and fit. The full-length sleeves needed reshaping from the elbow to wrist to increase comfortable forward reach, the sleeve ends needed opening for more comfortable hand entry and exit. The half belt proved to control the drape by use of gravity; this meant stride and seating actions could access the volume while assuring the fabric returns to the upright draped position.



Figure 38. Wool *toile*.

Fabric selection for this coat was determined by the amount of weight created by the back drape. A weight of wool lighter than the *toile* was selected for the final exhibition garment. Versions of pockets were trialled and model's opinions sought on their placement. The half belt's stress points were tested using a traditional *window* method to secure the belt into the fabric although this was not used in the final version. The height of the *cut in* gusset created optimal wearer comfort by maintaining a distinctive vintage silhouette.

## The split panel coat as it negotiates form and function



Figure 39. Panels and splits coat pattern.

This original 1958 pattern features side panels extending as splits to open for stride room. *Tuck darts* and panel *gussets* ending at the front and back *armscye point* work in combination to create subtle bust and shoulder shaping. The *mitre* at centre back allows the collar to cross *frontal* and *sagittal* planes in a *compound curve*.



Figure 40. Paper *toile*.

The paper planes revealed that front splits directly below the gusset points created a *frontal* silhouette free of distortion. A side view shows how the split creates an 'A' line space from the stable shoulder configuration. The position of the side panel in relation to the tucks created a generous *Pli-de-souplesse* for *ease-of-wear*.



Figure 41. Working drawing.

This straight-sided silhouette offers an alternative means to creating generous stride room compared to the other fuller skirted styles.



Figure 42. Calico *toile*.

The front required an alteration of *button lap* extension as the original pattern allowed for a *clutch coat* depth. Fit testing found the practicality of fold back cuffs to be in sympathy with a shorter than original hemline.



Figure 43. Wool *toile*.

A firm, woven *Melton* style wool flannel was chosen for the final garment. This was based on the soft behaviour of the *toile* wool's structure in relation to maintaining a straight silhouette to the splits while in motion.

## The squared yoke coat's simple shoulder stability



Figure 44. Darted yoke coat pattern

This original unused 1959 pattern was selected for its complexity of seam shaping around the shoulder girdle. Although the many seams of the shoulder girdle make it suitable for compartmentalised processing, the triple pivot points require time and skill to produce well, so it is a style unlikely to be fast fashioned.



Figure 45. Paper toile

There is a crisp paper fold from the pivots to the hemline highlighting where the major change of body planes takes place. The pivoted corners in relation to the hems width form this restrained shaping. The same principle is evident in the collar as it crosses the *sagittal* plane in a *compound curve* to push up the collar tips.



Figure 46. Working drawing.

A flat drawing of more realistic proportions allowed me to assess the style in relation to the others. Although the sleeve seaming is more complex a drawing reveals that the important shoulder girdle is potentially well stabilised by the yoke and collar configuration. Pocket options were visualised with a slanted version giving a possible ergonomic function to the original.





Figure 47. Calico *toile*.

Although the *skirt* section of this style was slightly fuller than the other styles, a fit test determined this still met the criteria for ease. The yoke's curve and position above the shoulder blades allowed full take-up of back ease with arm's reach. Fit testing found the combination of a high shoulder girdle, close collar and close *armscye* seams to efficiently maintain the garment's balance.



Figure 48. Wool *toile*.

The pivots are distinctly vintage in appearance and behaviour as they combine to shape the fronts of the *shoulder crowns* with cornered shaping for the bust and front of upper arm. After several tests and practice for reliability of skill the *whole garment* wool *toile* process provided a degree of assurance before attempting what I initially considered a risky process of six perfect pivots along one seam.

## The continuous pointed yoke coat's version of simplicity



Figure 49. Yoke and pivot coat pattern.

This original 1958 pattern The shoulder girdle seaming in combined with the collar closing creates stable garment balance. I determined that the wide pivot angles would allow generous shaping to ensure a horizontal hemline.



Figure 50. Paper *toile*.

A paper *toile* drafted with an extended *skirt* section highlighted the garment's inherent balance. The relationship between lower *armscye* placement on the body and the *Pli-de-souplesse* at front and back is clearly identified by the paper's tensile structure. The folds are even on the body despite different shaping seams of front and back, this was achieved by manipulating the weight of balance between the *frontal* planes



Figure 51. Working drawing.

Although the paper *toile* process resulted in giving a realistic idea of proportion and fit, the sketch process provided an additional perspective to visualise proportions and details such as collar, pocket and closing options. This then added to the informed decisions made during the calico *toile* stage.



Figure 52. Calico *toile*.

The position of the front pivots absorbs the bust dart shaping and as part of a continuous shoulder girdle seam to create a subtle stability from which the well balanced *skirt* section hang. The method of pivot construction is crucial to achieving even and reliable shaping across the chest and shoulder blades.



Figure 53. Wool *toile*.

For this coat sample a fabric of similar to the *toile* behaviour and drape was selected for the final exhibition coat as the drape and weight provided enough structure to support the complex seam shaping. Additionally it was decided that using a napped texture had potential to enhance the planar quality created by the pivot joins.

## The half raglan coat's upper body seam articulation



Figure 54. Half raglan coat pattern.

This 1952 original pattern was selected for the dimensional seaming along the neck, shoulders and forward seam at the hip pockets. It crosses *frontal* and *sagittal* planes in the seaming from neck to sleeve ends, and includes a *compound curve* in the collar shaping.



Figure 55. Paper toile.

The back sleeve's *raglan* seam allows for *ease-of-wear* over the shoulder blades and extends into the neck planes. The seam from neck planes to the sleeve hem was of complex construction. The paper *toile* process was able to clarify the ergonomic structure of the seam placement around the arm and side as a separate stage before considering the order of construction. The paper bulge of the *skirt's* front silhouette was identified as too narrow to meet criteria for stride room. This was resolved with removal of the original vent and adding suitable flare to the hemline.



Figure 56. Working drawing.

The sketch allowed me to trial various degrees of added flare to arrive at a proportion both functional in terms of meeting criteria for stride room as well as testing for visual balance in relation to the long pivoted top seam. Removal of the unnecessary pocket flaps simplified the silhouette to feature the detail of the seam across the *frontal* plane into the pocket mouth.



Figure 57. Calico *toile*.

Proportions of the original pattern were increased in response to the drawing. The balance remained stable when constructed in calico and the model commented favourably on the *ease-of-wear* and range of movement.



Figure 58. Wool *toile*.

After constructing the combined neck and sleeve top seam, forces of gravity overnight revealed some stitch extension. This reinforced to me the importance of stabilising *off-grain* shoulder seams as a crucial construction process. The tape application was applied at a determined optimal point of fabric extension to reflect a simple efficiency in the maintenance of a smooth seam over the life of the garment.

## CHAPTER SIX – The final coats

This chapter aims through image and text to reflect on some of the details of behaviour embodied in the final coats that are not discussed elsewhere. The final coat constructions feature a variety of vintage seam placements that include considerations for *ease-of-wear*. Subtleties of appearance and emphasis are informed by garment function, material qualities and construction techniques.

Once all the coats were completed and together in the empty studio for display, the opportunity arose to reflect on the finished coat's combined visual and behavioral impact. The most evident common features of the coats were their shoulder stability as witnessed through the use of live models. This stability then allowed the freedom for seam placement to cross both within and over a body plane for more sympathetic wearer-garment ease. This is not possible in the mass produced market where flat pattern configurations are predominant.

The behaviour of the kimono sleeve seaming on the body fit became more evident when presented as a collection as the sleeves' configuration from the neck mimics the body's natural

arm and shoulder movement revealing subtle and stable *ease-of-wear* advantages. I propose that this configuration creates a simpler relationship to the body than the predominant oversimplified configuration of double axes over the shoulder *sagittal* planes (see Figures 3 and 4).

While the colour palate of the final coats was selected to reference the iconic bright shades of the 1950s era, the various solid colours help accentuate the smooth seam construction. Silk Dupion lining was chosen for its crisp slippery characteristic that supports garment's function as an over-garment and the wear ease. It has a discreet lustre, durable fibre and natural properties of insulation and is anti-static. The silk also adds a quality to the garment with its distinctive rustle on the moving body.

Images of the coats in motion (see Figures 59 and 60) replicate the display presented for examination. The coats were modelled live, placed on mannequins, and later on a rack for closer inspection. Images of seam detailing are included to aid in understanding construction's roles in the value of a traditional.



Figure 59. Final Coats in Motion  
The Coats from left to right are; model dressing in the Elbow Seam, sample coats on the rack,  
Elbow Seam in motion, the Cut in Gusset and the Continuous pointed yoke.



Figure 60. Final Coats in Motion  
Coats continuing from previous page; the Half Raglan, the Split Panel, the squared yoke and the One Seam Coat.



In the One Seam Coat, the only full seam is in the centre back. By using the full width of the fabric, side seams have been eliminated. This enables the fabric to fold across the *sagittal* plane of the body thereby making the most of the woven wools drape properties on the straight of grain line. While this approach of minimum force on materials helps create a simple shape, it does present a construction problem. A potential weak point exists where the sleeve section joins the body (see Figure 61). This is dealt with by using a traditional seam replacement technique (see Figure 15) using silk organza to create a new light weight seam allowance of appropriate durability.

This coat also incorporated the traditional technique of *seam jumping* where a seam intersection is not sequentially captured; this creates the smoothest exterior appearance by spreading the fabric's tension evenly over the join and the body. This means equally strong surfaces create conditions for even wear and durability. For example the front has wedge shaped inserts where *jumped* seams allowed smooth forward sleeve pitch with ample *ease-of-wear* across the shoulder blades.



Figure 61. Detail of sleeve to body intersection secured by seam replacement method.

The Elbow Seam Coat embodies the idea of least force for most gain across the shoulder girdle by combining shaping features. The top body seam extends from the neck along the *frontal* plane to under the arm. This continuous seam performs shoulder shaping, elbow shaping at a pivot, and ends under the arm (see Figure 62) meeting the side seam using techniques of seam allowance replacement and *jumped* seams (see Figure 63). The pivot changes the direction of the sleeve pitch at the elbow and accommodates the elbow crook in one continuous motion without compromising fit for an outstretched arm. These traditional techniques are beyond a contemporary approach of flat constructed fully crossed intersections. Again it is the pivot technique that holds considerable risk; if the weakened corner is protected it eliminates the risk of an unsightly, uneven surface or weakening and pulling apart. Both these risks can be avoided by using the time and skill available to the vintage method of adding a new seam allowance (see Figure 15) at the pivot. Silk organza is the traditional fabric of choice to secure the corner as it is translucent enough to accurately view the pivot during construction and strong enough to manipulate into a sharp corner.



Figure 62. Detail of shaped elbow pivot.



Figure 63. Detail of jumped seam intersection

The *Cut in Gusset Coat* features bias cut inserts under the sleeve which are positioned close to the body resulting in a well-defined sleeve and full skirted silhouette. The bias gusset is cut into the *frontal* plane allowing the angled corners to provide shaping across the change between the *frontal* and *sagittal* body planes (see Figure 64). It also allows the wearer's arms to flex across the body while maintaining garment stability. The combination of the gusset placement to the body and its extension across body planes creates secure and comfortable shoulder stability enabling a full-skirted coat. The gusset also creates a well-defined sleeve. This is achieved using both seam allowance replacement method, and *jumped* side seams which create smooth, secure corners at the front and back *armscye points*.

Should any of these seams be positioned or constructed differently, the balance, proportions and silhouette would alter. I suggest that an opportunity to form a simple relationship based on sympathetically combining distinctively vintage elements of proportion, ease and construction and the position of these elements in relation to the body enhances *ease-of-wear*.



Figure 64. Detail of cut in gusset corners and crossing the sagittal body plane.

The Split Panel Coat highlights traditional seaming options for shoulder stability where a combination of seams works together as support. Shoulder darts create back neck fit with a *compound curve* over the shoulder. These are supported by the neck band which is bisected at the centre back allowing flex over the neck and upper spine (see Figure 65). The upper sleeve seam configuration from neck to wrist uses gravity to stabilise the fabric drape over the *frontal* body planes. Because there is no sequential capturing in the seams (that is, they are all *jumped*), fabric tension is evenly distributed along the grain line. This traditional method of construction promotes wearer comfort by ensuring consistent stability over all articulated areas of the shoulder girdle.

Fuchsia silk lining pieces follow the same assembly methods and shape as the outer wool fabric (see Figure 66). This is a traditional vintage technique, rarely evident in contemporary garments, and is reflective of a sensitive approach to the wearer-garment relationship. Outer and inner shaping closely replicate each other, thereby behaving as one silhouette.



Figure 65. Detail of neck band, darts, back and shoulder seam combination.



Figure 66. Detail of silk lining replicating the outer shell construction.



The Squared Yoke Coat features a six point, squared off, continuous and multi-directional seamed yoke. This combines dart shaping to support the fly away collar as well as forming a stable shoulder girdle above and below the neck (see Figure 67). The position of the yoke corners enables a combined bust, shoulder and upper chest shaping which eliminates a conventional dart. The yoke does not fully cross the bust, therefore the yoke and the continuous seam both shape and minimise the bulk of the centre front opening. The seaming also avoids the slight drag lines often produced by sequentially captured seams. In addition, the *off-grain* cut of the yoke moulds over the arm's articulation points so that flexibility is maintained during all forward arm movement. Preserving stability in the squared corners is crucial to the success of this combined seam configuration. It is therefore reliant on the seam allowance replacement method which has been used consistently throughout all the coat samples.

All hem openings in the final coats have been constructed to allow even fabric tension over time by securing only the tip of a deep hem allowance into the facing seam allowance (see Figure

68). This vintage technique allows the hem return to permanently remain both upright and unattached.



Figure 67. Detail of squared yoke corners.



Figure 68. Detail of hem return secured into the front facing seam.

The Continuous Pointed Yoke coat features another version of the multi-directional seam approach that manipulates dart values into the angles of a yoke and sleeve section (see Figure 69). Along the continuous seam, points and corners are placed to create shape based on the degree of ease in relation to the central axis of the full shoulder girdle. The yoke's six pivot points are constructed using the seam replacement method in order to maintain squared and accurate positioning of the corner points. This method offers opportunity to create any number and degree of independent corners across all body planes thus demonstrating the useful potential of an underused production technique. An advantage of this method is the retention of consistent and evenly weighted grain lines within the garment and over body planes. Maintaining grain line consistency affects a simpler fit that impacts subtly on the wearer-garment relationship.

This coat's *grown on* front facing provides no seam allowance to receive the hem (see Figure 70). Therefore the hem return is attached using a traditional option of joined interfacings in order to secure and maintain an even hem finish.



Figure 69. Detail of continuous dart manipulation.



Figure 70. Detail showing an invisibly secured and even hem return.

The Half Raglan Coat features composite neck and sleeve seaming as a result of a compound neck curve extending into sleeve shaping. The raglan sleeve section also begins at the back of the neck point and wraps the under arm as it extends to finish at the front *armscye point*. This effectively replaces the bulk of conventional underarm seaming with a flexible grown on gusset.

A full length center back seam acts as a visual divider as well as a practical means to create a long seam that relates the compound neck curve with shoulder and arm shaping ( see Figure 72), to end with a curved split to accommodate wrist articulation (see Figure 71). Seams radiate from the neck thereby creating a stable anchor point on the body before crossing and bisecting body planes. This demonstrates an option for seam placement that creates garment stability that relies on a traditional construction method of seam allowance replacement. The construction of the collar piece down the sleeve is on the bias grain line which enables continual and flexible behaviour to enhance *ease-of-wear*.



Figure 71. Detail of sleeve seam ending in a curved split.



Figure 72. Detail showing the neck's compound curve and sleeve combination.

## CONCLUSION

This research project initially examined the consequences and implications of streamlining fast fashion construction processes. This exposed a loss of sympathy and value in the wear-garment relationship. An investigation was then conducted to identify and uncover the inherent value in a more traditional approach to construction. At this stage, aspects of a vintage approach were tested. Also a result of comparing approaches and techniques and remaking of a number of garments, it became clear that the coat was as an appropriate garment to investigate the value of a traditional vintage approach in relation to an improved wear-garment relationship.

The final coats represent the use of a vintage inspired or traditional approach supported by well-engineered construction techniques. They display as their core principle, an exacting relationship between garment function, shape and material qualities with respect to construction techniques and body fit.

By re-examining methods and techniques that offer a more sympathetic fit I have confirmed a shifting emphasis over recent years in the use of construction principles in the fashion

industry. This shift is pronounced in the methods of assembly used to produce current low cost women's wear. This is driven by a trade-off of quantity at the expense of quality which highlights an ideology of disposability. The research practice is underpinned by the idea that a once valued wearer-garment relationship is diminishing in the presence of oversimplified mass production approach to garment making. My research findings indicate that streamlined construction processes can short-change the wearer. This is achieved by imposing material limitations and assembly processes that compromise fit, comfort and durability of wear.

I suggest the value of a traditional approach is in the practical and aesthetic implications for fashion practitioners looking beyond the fast fashion model of production. This idea is supported by Fletcher's statement (2012) "in order to promote greater resourcefulness and longevity of products in fashion, it is to clothing competency and the "craft of use" that we must turn our attention. Such processes recognise the social and experiential dimensions to fashion, which facilitated by a garment's materials, design and construction, influence how long clothing lasts" (p. 236).



The implications of this research could, as identified in the introduction, be used to help students draw a deeper contextual understanding of fashion's diverse technical heritage. Students and fashion practitioners could also apply principles of this approach as a means to inform or re-examine the craft of garment making in terms of refining the wear-garment relationship.

## GLOSSARY

<i>All-in-one</i>	An amalgamation of garment sections such as body and sleeve.	<i>De-skill</i>	A process of separated and simplified assembly operations, usually with the aid of automated machinery, designed to eliminate human error by simplifying operator skill level requirements.
<i>Armscye</i>	Armhole shaping	<i>Ease-of-wear</i>	The degree of space allowed for between fabric and the wearer.
<i>Armscye point</i>	Front and back notches indicating the point below which body plane changes from <i>frontal</i> to <i>sagittal</i> .	<i>Fit model</i>	A model of nominated size and height to test garment fit.
<i>Banded</i>	Double-layered rectangular shaped band added as a cuff or collar section.	<i>Frontal</i>	Frontal body plane, back view occupies same plane as front.
<i>Button lap</i>	Depth of overlap to accommodate a button closure.	<i>Fusible</i>	Thermoplastic-coated interfacing applied with heat and pressure to stabilise a fabric.
<i>Clutch coat</i>	Coat designed with narrow front extensions, replacing a button lap.	<i>Grown-on</i>	A seamless extension added to a garment section.
<i>Compound curve</i>	Multi-directional fabric curvatures that cross body planes, such as around the neck or wrist.	<i>Handle</i>	Fabric's tactile qualities; hand feel.
<i>Cut in</i>	A seamed section encroaching into the body plane, such as by the addition of a close fitting gusset section.	<i>In seam</i>	An opening in the seam for a buttonhole or pocket.
<i>Design ease</i>	Ease greater than required for <i>ease-of-wear</i> .	<i>Loft</i>	Fabric depth.
		<i>Melton</i>	A solid structured woven wool fabric suitable for coats.

<i>Mitre</i>	A stitched corner seam constructed to bisect from corner to point.
<i>Negative ease</i>	Fabric cut smaller than the body.
<i>Off-grain</i>	All degrees other than the straight grain of woven fabric.
<i>On-grain</i>	The most stable straight grain line of woven fabric, also known as the warp.
<i>On-the-stand</i>	Three-dimensional working of paper or fabric directly on a mannequin.
<i>Pli-de-souplesse</i>	French term for the fabric drapes created by ease allowances at the front and back <i>armscye</i> .
<i>Sagittal</i>	Side body plane.
<i>Seam jumping</i>	Completing an intersection in sections to avoid capturing the seam allowances. This ensures a smooth appearance and even distribution of stress along a seam.
<i>Shoulder crowns</i>	The curved top and outermost point of the shoulders.
<i>Skirt</i>	The section of coat that drapes from the shoulder girdle.

<i>Toile</i>	Test garment, usually in calico or other fabric close in nature to the intended finished garment used to test a shape and proportion on a body before incurring the expense of final fabrics.
<i>Topstitch</i>	Visible, surface stitching.
<i>Wear ease</i>	The space between wearer and garment fitted to effectively accommodate movement. This differs to the excesses of design ease.
<i>Whole garment</i>	This a <i>NFF</i> assembly process where one operator assembles an entire garment.
<i>Wind</i>	A twist created by uneven degrees of seam grain line along a seam.
<i>Window</i>	A stabilisation technique where additional fabric is used to face an opening and restore seam allowance or protect and reinforce a corner.

## REFERENCES

- Anderson, G. (2011). *Sandra Ericson, "Balenciaga in depth" seminar*. Retrieved October 8, 2013, from <http://genevaanderson.wordpress.com/tag/ronaldus-shamask/>
- Azuma, N., & Fernie, J. (2003). Fashion in the globalized world and the role of virtual networks in intrinsic fashion design. *Journal of Fashion Marketing and Management*, 7(4), 413.
- Balenciaga one seam coat. (2010). Retrieved October 8, 2013, from <http://www.lamangalamanga.com/2010/06/balenciaga-one-seam-coat.html>
- Bane, A. (1956). *Creative clothing construction*. Tennessee, USA: Kingsport Press.
- Bishop, E. (1959). *The bishop method of clothing construction*. Philadelphia, USA: J.B. Lippincott Company.
- Brackelsberg, P., & Marshall, R. (1990). *Unit method of clothing construction*. Illinois, USA: Waveland Press.
- Brown, P., & Rice, J. (1998). *Ready-to-wear apparel analysis*. New Jersey, USA: Prentice-Hall.
- Carr, H., & Latham, B. (1988). *The technology of clothing manufacture*. London, UK: BSP Professional Books
- Carr, H., & Latham, B. (2000). *The technology of clothing manufacture*. London, UK: BSP Professional Books
- Cassidy, T., & Bennett, H. (2012). The rise of vintage fashion and the vintage consumer. *Fashion practice*, 4(2), 239-262.
- de Pont, D. (2010). *Looking terrific: The story of El Jay*. Auckland, NZ: National Institute of Creative Industries & New Zealand Fashion Museum.
- Fletcher, K. (2012). Durability, fashion, sustainability: the processes and practices of use. *Fashion practice*, 4(2), 221-238.
- Gabrielli, V., Baghi, I., & Copeluppi, V. (2013). Consumption practices of fast fashion products: a consumer-based approach. *Journal of fashion marketing and management*, 17(2), 206.
- Glock, R., & Kunz, I. (1990). *Apparel manufacturing: Sewn product analysis*. New Jersey, USA: Prentice-Hall.
- Glock, R., & Kunz, I. (2005). *Apparel manufacturing: Sewn product analysis*. New Jersey, USA: Prentice-Hall.
- Gurney, E. (1939). *Pattern drafting pattern grading garment making garment fitting*. Los Angeles, USA: Dunn Bros
- Hammond, L. (2009). *Babs Radon: The elegant moment*. Napier, NZ: Geon Brebner Print.
- Hayes, S., & Jones, N. (2006). Fast fashion: a financial snapshot. *Journal of fashion marketing and management*, 10(3)282-300.
- Jenb, H. (2004). Dressed in history: Retro styles and the construction of authenticity in youth culture. *Fashion theory*, 8(4), 387-404

- Kim, E., & Johnson, K. (2009). Forecasting the US fashion industry with industry professionals: Production and retailing. *Journal of fashion marketing and management*, 13(2) 268-278.
- Lloyd-Jenkins, D. (2012) *The dress circle: New Zealand fashion design since 1940*. Auckland, NZ: Random House.
- Loschek, I. (2009). *When clothes become fashion: Design and innovation systems*. Oxford, UK: Berg.
- Lowe, J., & Lowcock, P. (1975). *An approach to quality control in the clothing industry*. London, UK: The Clothing Institute.
- Malouff. (2012). *Malouff's anatomy and physiology blog*. Retrieved October 7, 2013, from <http://malouffsaandpblog.wordpress.com/2012/10/10/becoming-oriented-with-the-human-body/>
- Mansfield, E. (1953). *Clothing construction*. Massachusetts, USA: Riverside Press.
- McColl, J., Canning, C., McBride, L., Nobbs, K., & Shearer, L. (2012). It's vintage darling! An exploration of vintage fashion retailing. *Journal of the textile institute*, 104(2), 140-150.
- Mehta, P. (1985). *An introduction to quality control for the apparel industry*. Tokyo: J.S.N. International.
- Melliar, M. (1968). *Pattern cutting*. London, UK: B.T. Batsford.
- Neuman, W.L. (1991). *Social research methods: qualitative and quantitative approaches*. USA: Allyn and Bacon.
- Pookulangara, S., & Shephard, A. (2013). Slow fashion movement: understanding consumer perceptions, an exploratory study. *Journal of retailing and consumer services*, 20, 200-206.
- Regnault, C. (2010). *Farewell to a stylish and generous man*. Retrieved October 8, 2013 from <http://blog.tepapa.govt.nz/2010/07/30/a-farewell-to-a-stylish-and-generous-man/>
- Ross, J.S. (2007). *Slaves to fashion: poverty and abuse in the new sweatshops*. USA: University of Michigan Press.
- Sennett, R. (2008). *The craftsman*. USA: Yale University Press.
- Shaeffer, C. (2010). *Fabric sewing guide*. Cincinnati, USA: Krause Publications.
- Solinger, J. (1961). *Apparel manufacturing analysis*. NY, USA: Textile Book Publishers.
- Solinger, J. (1980). *Apparel manufacturing analysis*. NY, USA: Textile Book Publishers.