

Categorising Remaking Methods for Fashion Practitioners

Julia English

RMIT University, Melbourne, Australia

Keywords: Remake practices; reuse methods; fashion remanufacturing; upcycled garments and accessories; textile waste.

Abstract: Within fashion and textiles, practices which transform existing textile waste materials are discussed using various terms, for example upcycling, remanufacturing, or redesign, however, this study will collectively refer to these as remaking practices. Through the examination of 38 cases of remake collaborations occurring within the Australian community between November 2019 to July 2023, this study explores how the fashion remake outcomes can be classified to more effectively support the development of different remaking practices. As a result, the paper proposes a remaking lexicon to encompass eight different methods which can be employed individually or in combination: over-dye, over-print, embellish, alter, splice, piece, patchwork and refabricate. This proposed categorisation draws parallels to traditional fashion production processes, yet also recognises that end-to-end production skills are not required for remaking, instead showcasing that the methods may use different skillsets. In identifying different types of skills, rather than different *levels* of skills, this paper highlights an opportunity for remaking practices to engage a wider range of actors and encourage a broader range of specialisations than has been previously suggested. The eight methods provide a clear categorisation to enable more critical comparison and evaluation of remaking practices, encouraging discussion into how the fashion industry might build a diverse ecosystem of remake practitioners.

Introduction

The volume of textile waste currently produced poses a significant challenge for the fashion system, whether this is in Australia where charities are currently overwhelmed with the volume of textiles (Heinrich et al., 2024), or internationally, as global exports of clothing to countries such as Ghana can have significant environmental and social impacts (McClymont, 2021). Moreover, for businesses producing fashion products, pre-consumer waste streams (deadstock) also pose a challenge for disposal, particularly when brands are unwilling to distribute them for reuse as-is (Roberts et al., 2023). Principles for retaining material value advocate for reuse over recycling, with approaches such as repair, refurbish, remanufacture and repurpose proposed as alternatives when direct reuse is not an option (Reike et al., 2018). Small-scale making with unwanted waste products has been recognized as a way to build more resilient economies and have positive environmental and social impacts (Bridgens et al., 2018).

These types of practices which transform existing waste materials can be described through language such as: remanufacturing,

upcycling, redesign, repurpose and more. When applied within fashion and textile contexts, these different terms often attempt to focus on a particular approach to transforming textile waste materials, such as at scale (remanufacturing) (Pal et al., 2021; Sinha et al., 2016), or as a means to increase material value (upcycling) (Dares, 2021; Sung et al., 2020), or turning materials to a different purpose (repurposing) (Eike et al., 2020). As a means of encompassing all these different terms, this study uses the term remaking, to avoid connotations of scale, value or purpose, instead placing the emphasis on the common process of transforming the material via making it again.

Background

Within the fashion industry, remaking practices which produce fashion outcomes (referring here to garments or accessories which are created by the fashion system), can be undertaken in a range of ways. However, across studies examining remake, the ways remake is described may not be consistent or clear. These descriptions sometimes use terms in conflicting ways, for example “patchwork” has been used to describe different remake processes (Han et al., 2017; Pal et al., 2018,

2021). One idea of patchworking referred to applying patches (Pal et al., 2021), while another was focused on cutting pattern pieces from garments and sewing into three-dimensional form (Han et al., 2017), whereas a third appeared to use it to represent creating a flat fabric from multiple fabric scraps (Pal et al., 2018). These methods are not the same, as one addresses minor issues in garments, while another cuts pattern pieces which must then fit within garment sections, whereas the third creates a length of fabric which can then be processed similarly to traditional production and may not face the same pattern piece size limitations. The other limitation is when studies do not actively recognise that there are multiple ways actors may engage in remake and therefore fail to describe or contextualise their specific processes. One example which cut pattern pieces from existing garments explored how this might be part of a zero waste approach, yet failed to acknowledge that other remaking methods might be more suitable or produce less waste (Lewis et al., 2017). Another discussed the potential of algorithms for streamlining processes yet did not describe how these interacted with practical construction processes and remake methods (Paras et al., 2022). Another study which evaluated the feasibility of different cases have did include different methods, yet did not explicitly draw links between the different methods and their feasibility despite them having different labour intensity, instead focusing on business approaches (Pal et al., 2018).

One proposed typology suggest that designers may make choices to either disguise or elevate waste (Payne & Binotto, 2017), while other studies focus on methods for approaching designing with garments (Bigolin et al., 2022; Lidström, 2023). These studies highlight how designers might approach remake via storytelling or specific techniques; however, they focus on transformation, limiting them as tools for discussing the requirements associated with the physical processes of remake. One more useful categorisation focused on repurposing, suggesting four methods: restyle, subtractive, additive and intentional patternmaking (Eike et al., 2020). Restyle to repurpose describes how remaking can involve using a fashion object in a different way than intended, while subtractive focuses on taking material away from a larger textile like a quilt or sheet, whereas additive brings together multiple material sources into one outcome,

with intentional patternmaking drawing on patternmaking techniques in order to create a new outcome (Eike et al., 2020). The boundaries around how these methods might be used together is unclear, for example, the intentional patternmaking appears to potentially also overlap with the other methods, whereas subtractive and additive appear to be oppositional. This categorisation is also attributed to different levels of skills, where restyling has the lowest, while intentional patternmaking the highest (Eike et al., 2020). Levels of skill seems to be a common theme, with categorisations of remaking methods as representing skills which move from “basic” to “advanced” (Lapolla & Sanders, 2015, p. 185), or “minor-value adding”, “Cut, add and put-together” and “sewn from scratch” methods being attributed as involving skills which increase from “low” to “moderate” to “high” (Pal et al., 2021, p. 8). While Pal, Samie and Chizaryfard (2021) offered the clearest description of different remaking processes, these categorises also did not capture examples where pattern pieces are cut directly from garments, demonstrating opportunity for further expansion and refinement.

Methodology

This study draws on the author's PhD research which examined remaking practices in Australia. Research methods include object analysis of products produced within 38 cases of remake collaborations between fashion businesses, and six semi-structured interviews with actors who were involved in remaking as part of these collaborations. Object analysis has been recognised as a useful method for understanding the knowledge embodied in fashion objects (Finn, 2014), and this method has been used for understanding historical garments which were remade (Aspinall, 2019). Object analysis is viewed as a likely method for future evaluation of remade outcomes and may therefore support a categorisation which can be more easily applied to both existing and future remaking examples. The research also draws on semi-structured interviews with actors involved in remaking to understand their experiences.

Findings

In evaluating the 38 different cases of remake collaborations, it became clear that the processes involved had some similarities to traditional fashion production processes, and

that the skills employed for remaking were varied.

Remaking Production Processes

The remaking processes were discerned by the researcher via object analysis and examination of information provided with the collaborations. Comparison of these processes to traditional fashion production steps, demonstrated that remaking methods facilitated similar material transformations to traditional steps, excluding raw fibre processing which aligns with recycling rather than remake. Examples of these comparisons are summarised in Table 1. Two cases showed that the remake process used the unwanted textile waste materials as ‘yarn’ to remake with, whether this was by crocheting post-industrial yarn waste, or the cutting of material into strips for weaving into a bag, with other examples in the literature weaving and felting luxury scraps (Keith & Silies, 2015), while amongst practitioners a well-known example is *Victor and Rolf’s* “Vagabond” collection (2016). This use of the unwanted textile material as a ‘yarn’ which is remade with is proposed as being classified as the method: *refabricate*. The next method: *patchwork*, was used either in isolation or combination with other methods in eight cases, with this process having involved large sections of material being created by actors joining together smaller sections to create a flat length of fabric, which was then processed similarly to regular fabric, evident in how the design lines were positioned

differently across repeats of the products. The *piece* method cuts pattern pieces directly from the garments or textiles, allowing for strategic placement of existing details, for example the specific placement of logos, or textile details such as whiskering on jeans (Dares, 2021). Once the pattern pieces have been cut, these pieces can then move through traditional garment construction processes, with this method being the most common amongst the cases and used in isolation or combination 15 times. The *splice* method has been referred to as “cut, add and put-together” (Pal et al., 2021), yet has been simplified in this study as the term *splice*, and involves cutting and joining together partial garments, potentially retaining existing features, trims and three-dimensional form, used by 11 cases in isolation or combination. By comparison, *alter* focuses on only one item which is adjusted in its form, and was primarily evident in one case, although another six used *alter* for some styles within their project. *Embellish*, *over-print* and *over-dye* each demonstrate alignment with traditional value add services, or whole garment finishes within the fashion industry. *Overdye* was used alone for four cases, but also used in combination with other methods for another six. *Over-print* and *embellish* were only used in isolation for one case each but were used in conjunction with other methods across eight and nine cases respectively.

Similarity to Traditional Processes	Example from this study	Remaking Method
Yarn production: Creating a yarn from fibres for use in fashion production process.	Post-industrial waste such as fabric offcuts and denim leg tests were cut into strips and woven as the weft yarn on a loom, resulting in bags.	Refabricate
Fabric production: Creating a length of flat fabric.	Different black linen garments were cut into panels, joined together into a length of fabric, from which oversized bat wing sleeve dresses were cut and sewn.	Patchwork
Pattern cutting: Cutting pattern pieces from a length of fabric.	A series of garments were created by cutting pattern pieces from post-consumer jeans and sewing them into jackets, skirts and dresses.	Piece
Garment construction: Joining together specific pieces of fabric into a three-dimensional form.	T-shirts were cut into two or three sections, which were mix and matched, then overlapped together to create new hybrid t-shirts.	Splice

	A wrap dress had the back neckline lowered and fullness added to the sleeves.	Alter
Trim: Adding trims or other components to specific areas of the garment.	Ruffles made from production offcuts were gathered and handsewn onto base garments.	Embellish
Placement prints: Applying a print to a specific part of a garment.	Unsold skirts and pants had organic shapes hand-painted all over them.	Over-print
Whole garment finishes: Treatments applied to the finished garment.	A range of garments including t-shirts and wool coats were tie -dyed or ombre dyed.	Over-dye

Table 1. Adapted from Author's own thesis. © Julia English

Remaking Skills

While these methods demonstrate production parallels, unlike traditional production, not all remake processes involve material moving through the whole system. For example, not all cases involved pattern-cutting or even garment construction as part of the remaking. Across the methods, the two which had the closest parallels to traditional garment production processes were patchwork and piece, with alter having similarities to tailoring and needing greater knowledge of garment construction. The actors who had training in traditional fashion production were more likely to use these methods, as three of the six interviewees drew on the methods of patchwork, piece or alter, and had cut, make, trim (CMT) training such as through formal university education or experience manufacturing for their own brand. In contrast, the three interviewees who did not have formal CMT training either used methods which did not involve patternmaking such as splice or over-dye, or brought in partners with CMT skills as needed, or only used piece and patchwork methods to make accessories which have lower technical, functional and fit requirements. Based on extant data, it was identified that of the 22 different actors, it was primarily responsible for remaking across the 38 cases, 13 actors were either trained in technical fashion production or had extensive experience in fashion production. Of these, 11 used methods including patchwork, piece, and/or alter, with the remaining two employing refabricate and over-dye. Four other actors were trained in fashion business, and they primarily used methods of splicing and over-dyeing, which they could gain skills in through informal learning, or employ other partners. Five actors had experience across a range of other fields such as art, product design, textile design and craft and costuming, and they

generally drew on these skills in their choice of methods, the artist and textile designer both using over-print, the product designers creating accessories, while the creative craft and costuming actor employed the embellish method.

Remaking Specialisation

It has been previously suggested that there are parallels between the intensity of the remaking process and the level of skills involved. Yet the fashion production process is not a series of low to high skill roles, but rather a combination of different skills, which are used together to create fashion products, and this is mirrored in remaking practices. Within traditional fashion production, actors involved in developing patterns are not always skilled at creating markers and cutting materials, while skilled machinists are not necessarily experienced patternmakers. Similarly, actors who can provide value add services may not know how to produce a garment end to end, and they do not need to. This pattern was also evident within the remaking context, as actors demonstrated specific skills which were associated with their methods. For example, one over-dyeing service focused on dyeing cellulose materials black, which requires a level of skill to get consistent and even colour. An arguably higher and more specialised skill was evident in another actor who over-dyed leather and wool coats across two different examples, as these materials are more challenging to dye whilst maintaining desired textile properties (like not shrinking or maintaining malleability). Other actors who had existing specialised skills applied these into a remake context, for example, two actors used their existing art style and over-printed in this style for their remaking process. While these cases demonstrate more skilled applications of these methods, low skill equivalents are often

evident in DIY books and guides, whether this is t-shirt yarn projects or taking up a hem (Fulop, 2020). In contrast to previous studies which have drawn parallels between remaking methods as offering low to high skill options, this study instead demonstrates that remaking methods involve different skillsets and acknowledges that there may be subsets of low to high skill levels within each.

Discussion

This study suggests that remaking methods can be differentiated based on the production processes and associated skills, proposing eight different remake methods, summarised in Table 2.









Remaking method	Icon	Description
Over-dye		Material has been altered at the fibre level, most commonly by dyeing, to change the colour and/or properties of the material.
Over-print		Specific areas of the material's surface are altered through self-adhering mediums, leaving the surface intact. May include single or multiple placement prints, ink, paint or other printable medium.
Embellish		Sections of material surface are added to or removed with perforation, with additions needing mechanisms for attachment such as fusing or stitching. This may include embroidery, beading, felting, patching.
Alter		Individual garment or fashion object has components removed or adjusted, commonly through cutting and/or sewing, to change form, retaining some existing three dimensionality.
Splice		Unwanted material is separated into sections which retain three dimensionality, these are then joined with other three-dimensional sections from other material.
Piece		Piecing uses material as fabric from which pattern pieces are cut, these pattern pieces are then joined together to create a three-dimensional fashion outcome.
Patchwork		Patchwork uses material as fabric from which sections are cut and sewn together into a flat fabric, from this new fabric pattern pieces are cut and sewn into fashion outcomes.
Refabricate		Material is made into a yarn which is then interlocked together using methods like weaving, knitting or crochet, this yarn could be strips of fabric or garment, an unravelled garment, or leftover ends-of-yarns.

Table 2. Overview of eight remaking methods, adapted from Author's thesis. © Julia English. Note: Icons available via <https://doi.org/10.25439/rmt.27323901.v2> under CC-BY.

Eight Remaking Methods

These eight proposed methods of remaking demonstrate clear links between actor's skillsets and the production processes involved in remaking. These eight methods are not exhaustive, but they do capture a wide range of remaking processes which may be used alone or in combination for fashion outcomes. Other researchers may benefit from contextualising their research amongst these methods, to support more critical evaluation of their cases.

The relevance of a method-specific focus is evident in an historical example which shows how overdyeing was a widespread practice in Japan until the mid-twentieth century (Sugiura, 2019). Where that example demonstrates how one method has been established in the past, contemporary practices might use the methods to more specifically evaluate the potential applications of their findings around approaches like using computer-aided design (Lewis et al., 2017) or garment pairing

algorithms (Paras et al., 2022). Clearly situating research in relation to methods might encourage more nuanced evaluation of the different remaking methods potential and the development of focused research areas.

Diversification of Remaking

Previous studies have classified some remaking approaches as low skill, which may have limited investigation into the potential diversity of specialisation within remake and the opportunities this provides. The case studies showed how some actors from outside traditional fashion can participate in remake, when their skills are recognised and applied within a remake context. Recognising the opportunity for participation from those within arts, crafts, textiles and wider creatives fields, might then both support the growth of these practices and offer opportunities for these actors to specialise and develop remaking practices.

Conclusions

This paper has proposed that a categorisation of remaking methods based on processes and associated skills offers greater opportunity for remaking practices to look beyond traditional fashion systems, and invite participation from other creative fields, opening the door for a highly diverse range of remake specialisations. The eight remaking methods, which are closely tied to skills and processes, provide a tool for describing, comparing and evaluating remake outcomes. These methods may be applied across a range of fashion and textile remake practices, whether these deemed remanufacturing, upcycling, repurposing, repair or remake, providing a clearly defined and consistent baseline for future examinations of practices which transform textile waste materials.

Acknowledgments

The author would like to acknowledge the Wurundjeri People of the Kulin Nations as the Traditional Owners of the lands on which this research was conducted. This paper is based on findings from the author's PhD Thesis *Collaborations for Remake: Participation in Practice* (2024), which was funded by an Australian Government Research Training Program Scholarship. Link to access thesis: <https://doi.org/10.25439/rmt.28536659>. The author would like to thank and acknowledge her supervision team: Dr Angela Finn and Dr

Rebecca Van Amber, for their support and guidance during the PhD process.

References

- Aspinall, M. (2019). *Back to the Future of Fashion Past: Re-fashioning Future Garment Making* [PhD Thesis, University of the Arts London]. University of the Arts London. DOI: 10.1007/978-3-031-06886-7_4
- Bigolin, R., Blomgren, E., Lidström, A., Malmgren de Oliveira, S., & Thornquist, C. (2022). Material Inventories and Garment Ontologies: Advancing Upcycling Methods in Fashion Practice. *Sustainability*, 14(5), Article 5. <https://doi.org/10.3390/su14052906>
- Bridgens, B., Powell, M., Farmer, G., Walsh, C., Reed, E., Royapoor, M., Gosling, P., Hall, J., & Heidrich, O. (2018). Creative upcycling: Reconnecting people, materials and place through making. *Journal of Cleaner Production*, 189, 145–154. <https://doi.org/10.1016/j.jclepro.2018.03.317>
- Dares, J. L. (2021). Fashion Upcycling: A Canadian Perspective. In S. S. Muthu (Ed.), *Circular Economy: Assessment and Case Studies* (pp. 19–75). Springer. https://doi.org/10.1007/978-981-16-3698-1_2
- Eike, R., Trick, E., McKinney, E., Zhang, L., & Sanders, E. (2020). Repurposing Design Process. In S. S. Muthu & M. A. Gardetti (Eds.), *Sustainability in the Textile and Apparel Industries: Sustainable Textiles, Clothing Design and Repurposing* (pp. 189–239). Springer International Publishing. https://doi.org/10.1007/978-3-030-37929-2_9
- Finn, A. L. (2014). *Designing fashion: An exploration of practitioner research within the university environment* [PhD, Queensland University of Technology]. <https://eprints.qut.edu.au/77850/>
- Fulop, L. (2020). *Wear, repair, repurpose: A maker's guide to mending and upcycling clothes* (First edition.). The Countryman Press, a division of W. W. Norton & Company.
- Han, S. L. C., Chan, P. Y. L., Venkatraman, P., Apeagyei, P., Cassidy, T., & Tyler, D. J. (2017). Standard vs. Upcycled Fashion Design and Production. *Fashion Practice*, 9(1), 69–94. <https://doi.org/10.1080/17569370.2016.1227146>
- Heinrich, K., Garis, L. D., & Rawson, M. (2024). *Measuring Reuse Activity and Impacts in NSW: Executive Report* (pp. 1–19) [Report]. Charitable Reuse Australia and NSW Environment Protection Authority.
- Keith, S., & Silies, M. (2015). New life luxury: Upcycled Scottish heritage textiles.

- International Journal of Retail & Distribution Management*, 43(10/11), 1051–1064.
<https://doi.org/10.1108/IJRDM-07-2014-0095>
- Lapolla, K., & Sanders, E. B.-N. (2015). Using Cocreation to Engage Everyday Creativity in Reusing and Repairing Apparel. *Clothing and Textiles Research Journal*, 33(3), 183–198.
<https://doi.org/10.1177/0887302X15572877>
- Lewis, T. L., Park, H., Netravali, A. N., & Trejo, H. X. (2017). Closing the loop: A scalable zero-waste model for apparel reuse and recycling. *International Journal of Fashion Design, Technology and Education*, 10(3), 353–362.
<https://doi.org/10.1080/17543266.2016.1263364>
- Lidström, A. (2023). *Redesign Foundations*. <https://urn.kb.se/resolve?urn=urn:nbn:se:h:b:diva-29579>
- McClymont, A. (Producer). (2021, August 12). The Environmental Disaster that is Fuelled by Used Clothes and Fast Fashion | Foreign Correspondent [Broadcast]. In *Foreign Correspondent*. Australian Broadcasting Corporation.
<https://iview.abc.net.au/show/foreign-correspondent/series/2021/video/NC2110H019S00>
- Pal, R., Larsson, J., Torstensson, H., & Scott, M. (2018). *Feasibility of Fashion Remanufacturing: Organizing fashion value chains for circularity through remanufacturing (including redesign)* (Report 3; Retextile Series Report, pp. 1–95). University of Borås.
<https://doi.org/10.13140/RG.2.2.15416.98561>
- Pal, R., Samie, Y., & Chizaryfard, A. (2021). Demystifying process-level scalability challenges in fashion remanufacturing: An interdependence perspective. *Journal of Cleaner Production*, 286, 1–12.
<https://doi.org/10.1016/j.jclepro.2020.125498>
- Paras, M. K., Wang, L., Pal, R., & Ekwall, D. (2022). A sustainable model based on genetic algorithm for garment redesign process. *Journal of Fashion Marketing and Management*, 1–18.
<https://doi.org/10.1108/JFMM-04-2022-0096>
- Payne, A., & Binotto, C. (2017). Towards a typology of waste in fashion practice: An Australian perspective. In R. Mugge & C. A. Bakker (Eds.), *PLATE: Product Lifetimes and the Environment 2017—Conference Proceedings: Vol. 9*. (pp. 340–346). Product Lifetime and the Environment (PLATE) Conference, The Netherlands. IOS Press. DOI: 10.3233/978-1-61499-820-4-340
- Reike, D., Vermeulen, W. J. V., & Witjes, S. (2018). The circular economy: New or Refurbished as CE 3.0? — Exploring Controversies in the Conceptualization of the Circular Economy through a Focus on History and Resource Value Retention Options. *Resources, Conservation and Recycling*, 135, 246–264.
<https://doi.org/10.1016/j.resconrec.2017.08.027>
- Roberts, H., Milios, L., Mont, O., & Dalhammar, C. (2023). Product destruction: Exploring unsustainable production-consumption systems and appropriate policy responses. *Sustainable Production and Consumption*, 35, 300–312.
<https://doi.org/10.1016/j.spc.2022.11.009>
- Sinha, P., Muthu, S. S., & Dissanayake, G. (2016). *Remanufactured Fashion*. Springer Singapore Pte. Limited.
- Sugiura, M. (2019). The mass consumption of refashioned clothes: Re-dyed kimono in post war Japan. *Business History*, 61(1), 106–121.
<https://doi.org/10.1080/00076791.2018.1494730>
- Sung, K., Cooper, T., Oehlmann, J., Singh, J., & Mont, O. (2020). Multi-Stakeholder Perspectives on Scaling up UK Fashion Upcycling Businesses. *Fashion Practice*, 12(3), 331–350.
<https://doi.org/10.1080/17569370.2019.1701398>
- Victor & Rolf. (2016). *Haute Couture Lookbook AW16*. Viktor&Rolf. <https://www.viktor-rolf.com/pages/haute-couture-lookbook-aw16>