



Green Gown
Awards 2017



Dissemination
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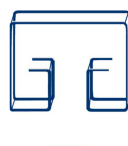
Finalist's case study



London College of Fashion, UAL Research & Development: Student

UN/DONE.

series #1



About the project

Summary

A research project analysing garment interaction and dressing methods within stroke survivors.

A video to depict the development of FSA Rubber fastenings as design probes, and their tooling for manufacture.

This forms part of an ongoing research project analysing garment interaction and dressing methods within stroke survivors.

Typically, the technical make-up and methods of garment construction do not take into consideration the impact of changes in our health throughout our lifetime. This can have major impacts upon self-esteem, independence and identity when faced with physical and/or cognitive injuries. The research builds upon strategies using fastening structures to question the 'typical movement' of user: garment interactions.

The research considers rubber to substantially contribute towards the analysis of stimuli within the rehabilitation process; developing intelligent surfaces which become responsive to touch and movement with capability to form semi-permanent and permanent connections.

ual: london college
of fashion

Profile

- LCF is one of six colleges which make up UAL
- LCF has over 700 staff & 5800 students
- UAL has over 4700 staff & 19500 students
- LCF is located across six urban London sites



Early prototype, Hand-cut FSA rubber multiple fastenings, (Salisbury, 2015)



Project partners

The project continues to work across several specialist spectrums, based upon STEAM principles (Kapsali and Toomey, 2014) bringing together specialists in stroke rehabilitation, material engineers, disability research hubs and botanical researchers as described below:

- Dr Flavia Amadeu, Designer & Consultant: FSA Rubber Brazil
- Rosemary Frazer, Stakeholder Manager: Global Disability Innovation Hub (sponsor of co-design workshop - 11 participants - bringing together groups from Charing Cross Hospital, Different Strokes, Sussex Innovation Centre, LCF, LCC and Royal College of Art)
- Bath Stroke Association (co-design workshop partner - 10 participants)
- The Hackney Stroke Project (16 participants)
- Headway (39 participants per day, covering 16 London Boroughs)
- Dr Mark Nesbitt, Botanical Research Leader: Royal Botanical Kew Gardens
- Brett Rust, Director 3D Printing Engineering
- Katie Ellis, Director: The Able Label
- Genise Turnbull, Different Strokes
- Delia Naylor, co-founder: Access Independent

The results

The problem

Stroke causes a greater range of disability than any other condition (Adamson, Beswick and Ebrahim, 2004) with limb weakness affecting approximately three quarters of survivors (Lawrence, et al., 2001). Sudden changes in physical mobility post-stroke mean that self-identity and confidence is often lost resulting in social deprivation, isolation and anxiety. Simple tasks like going to the toilet become troublesome due to dressing difficulties, and with increased toilet visits for around half of stroke survivors who experience bladder weakness as a result of stroke (Lawrence, et al., 2001), this is even more restricting. Where the physical results of stroke can be easily diagnosed, the psychological impacts are less so (Stroke Association, 2017) and feelings of anxiety and isolation can negatively impact on the deterioration of health and wellbeing during recovery.

The approach

This research considers how can both the psychological and physical effects of stroke be examined and reduced through improved contact with our clothes.

Touch has the ability to enhance or reduce social disorders; it directly influences mood, cognition and self-control (Linden, 2016). Touch is considered as a fundamental agent within the research, activated through the use of fastenings as design probes. In addition to touch, the fastening further considers the concept of movement and independence. The research aims to approach this from a non-conventional method of garment design;

This research challenges the traditional convention of static garment construction techniques into engineering a STEAM principle of 'intelligent' and 'animated' rather than 'inanimate' (Kapsali and Toomey, 2014), advanced engineering developments involving CAD technologies. This practiced work relies upon *haptic* interactions, whereby the process of fastening is considered as promoting a dialogue between user and garment.

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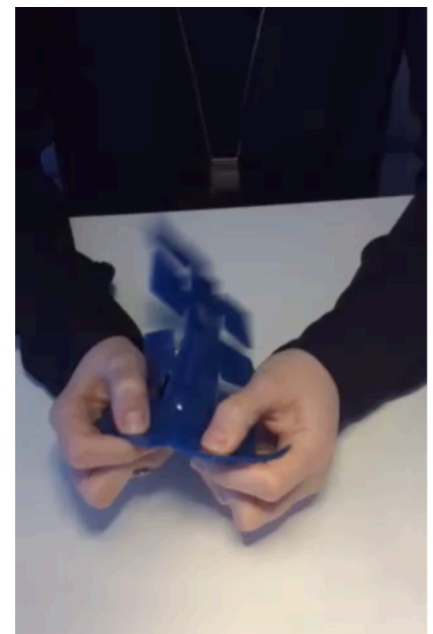


'Pivoting Pattern Cutting': the regeneration of movement (Salisbury, 2015)

"Although the biggest steps in recovery are usually in the first few weeks after a stroke, the brain's ability to 're-wire' itself, known as neuroplasticity, means it is possible to improve for months or years" (Wolf et al., 2008) This means that the importance of consistent rehabilitation and transitional therapy can actively improve the health and well-being of stroke patients well into their future lives. The development of such fastenings aim to represent an active and constant source of rehabilitation, presented within a familiar, everyday setting which is taken beyond medical and community therapies into the future lifestyle.

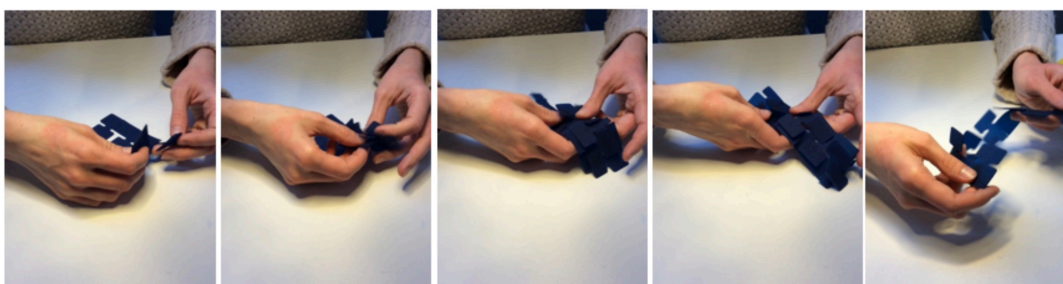
Natural FSA (Semi Artefact) Rubber, tapped by local communities in the Brazilian Amazon was the medium of choice for the first prototypes. The rubber investigates the flexibility of movement of a fastening and its tactile qualities. The shape and construction of the fastening aims to test the approach to learning a new task, that is fastening, and analyse the type and extent of movement within the body when fastening. By positioning the fastening in a range of positions on the garment, body orientation and flexibility are tested;

The process of dressing can be both a conscious and subconscious activity. What happens when this process is involved in the act of garment construction and what is the effect upon personal rehabilitation progress? In this project, the fastening is used to form the garment and so aims to encourage the user to strive to re-create shape and form when re-fastening. When unfastened, the fastening can move away from its counterpart by a great distance and actively takes on differing degrees of weight of the garment. The process of re-fastening can involve both locating the fastening by moving the body in different directions and supporting different degrees of weight of the garment which can impact grip and control. The project intends to further test the impact this has upon the motivation for the user to perform the task, the difficulties involved and the impact on recovery.



User Test with Prototype 3

Fasten: Attempt 1 – 'Permanent' Fastening Method



Fasten: 9.98seconds



Finally, co-design workshops enable experts to get involved in the creative process, question developments and respond. A cross-sensory approach allows for communication of thoughts to be self-tailored to individual needs, allowing for a more relaxed response. The workshops are a chance for participants from different groups to meet each other and work together.



Collaborative participatory activities: GDI Hub sponsored workshop (Salisbury, 2017)

Our goals

- explore in detail the experience of post stroke rehabilitation
- test the methods of user-led design practice
- demonstrate the agency of new uses of materials
- gather data on specificity of experiences of cross sensory modalities of touch, tactility, kinetic and proprioceptive experience.

Obstacles and solutions

Obstacles

Solutions

Recording wide range of opinions from participants when several conversations are taking place	Team up with supportive partners in order to record and gather data and use technological tools to record including voice recorders and cameras. This enables us to provide a sensory video of the responses and the activities of the workshop to therefore encourage greater conversations from there onwards.
Obtaining 'raw' data - otherwise known as tacit knowledge	Investigate reactions from a variety of approaches and use abstract questions which may illicit a response that isn't self-edited by the participant. By doing this we are able to tailor activities which draw out the raw data from a subconscious level of the participant
Enabling those with aphasia (or communication problems) as a result of stroke to participate and communicate	Prepare questions in advance so participants may type/ add photos/ create presentation of a response. This was particularly evident in the Bath Stroke Association workshop where a member put together a visual diary of experiences to present.
Working efficiently cross-continent with experts in Brazil	Increase dialogue and have a professional interpreter so communication to locals in the rubber tapping workshops wasn't misunderstood. Furthermore, we would plan in advance to account for time delays and delivery of samples. In support of this pre proof-testing took place in the UK to increase frequency of developments.

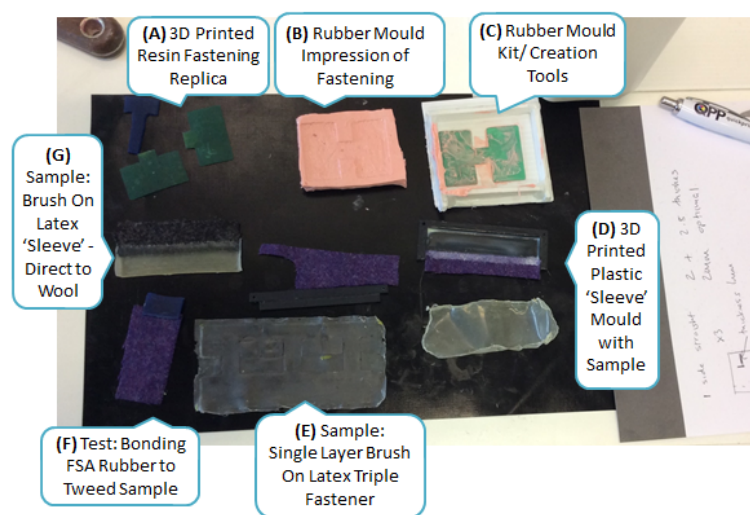


Performance and results

This research has been focused upon analysis of garment: user interaction within the process of dressing and throughout daily routines of stroke survivors. Findings are ongoing, however, so far the project has seen the development of co-design workshops, a range of articles and video footage, as well as speeches at summits and trade shows. Please see 'Sharing Your Project' section for further details.

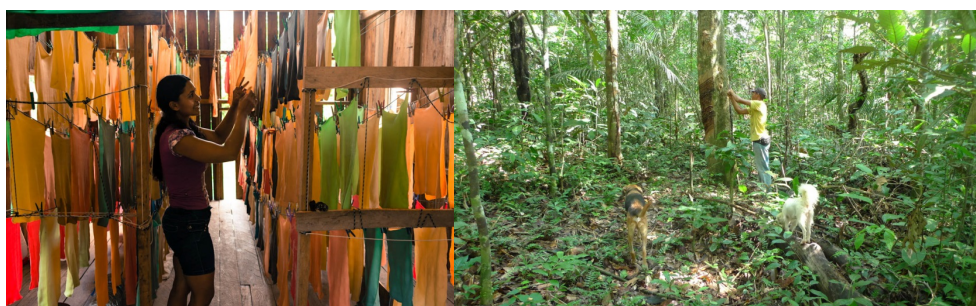
In terms of results, material development plays a key role which has focused on reducing the environmental impact associated with the production in several ways;

Firstly, through the use of natural FSA Rubber as an alternative to oil-based rubbers. The FSA Rubber used is fully biodegradable and uses natural oils to add scent to the material. Secondly, the development of production tooling to create the fastening. This aims to contain the entire process of vulcanisation in one area. The latex is collected from the tree, tapped directly into the tool and emerges as a finished product within the rubber tapping workshops. This reduces the carbon footprint of production and utilises the most of the material thus reducing waste by approximately 20-30% (when compared to alternative die cut methods).



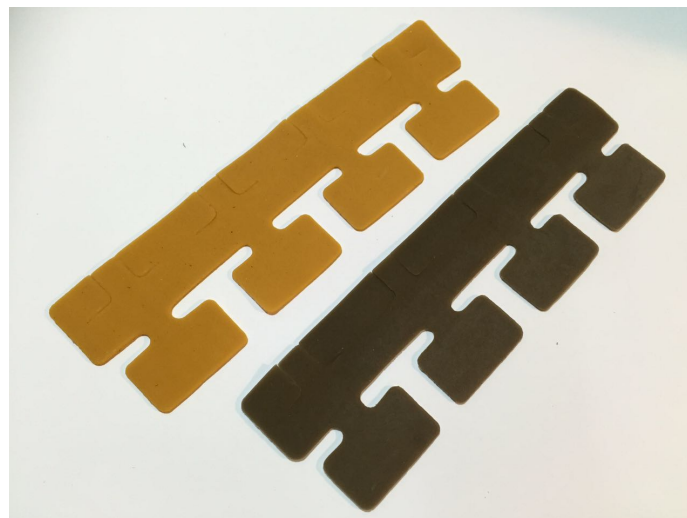
Development of fastening and tooling, Sussex Innovation Centre (Salisbury and Rust, 2016)

The production method used by the tooling also maximises the performativity of the product by reducing weak points within the structure, so reducing waste from 'broken' fastenings after use. The technique for tapping utilises a centuries old method, where locals remember a 'cultural map' of the land to know what trees to tap and in what routine. This encourages natural habitats to flourish and remain undisturbed.



FSA Rubber Tapping Workshops, Brazil (photos courtesy of Amadeu)

The work increases employment for another new workshop, employing 11 locals on average and helping to preserve approximately 500 hectares of the rainforest. The concept can be scaled up and replicated to help curb deforestation. It has already gained interest from Kew Gardens Field Researchers, who see the potential for it to enhance the economic value of the rubber in the Bolivian Amazon. I am working with them to continue developments within this area.



Die Cut FSA Rubber Fastening Prototypes (Salisbury and Amadeu, 2016)

The research is ongoing and will form the development of a PhD for which I have been awarded a highly competitive, prestigious studentship to progress the work at the Royal College of Art, which started on 1st October 2017.

The future

Lessons learned

'Waste'

My practice always strives towards a mindful approach to reducing waste, however, when I began to place this alongside intentions to improve the performance of the fastening I began to question alternative methods of manufacture. As a result, further questions arose regarding the correlation between duration of manufacture and material stability which could change the performance of the product. It was through these enquiries that we are now able to investigate how responsive a material is towards differing abilities and the dialogue created between user and garment. Is it possible for a process to be stopped mid-way through its 'usual' method of manufacture in order to obtain alternative behaviours of a material? And if so, how can we apply this to meet the needs of a diverse audience? Could this change the way which we see materials and offer multiple options for use - because if we are able to apply different degrees of movement according to our ability, can we use the same product to those with differing abilities? And what is the outcome of this? This concept is now being taken forward into further research within a PhD format.



Right: Cutting Process, Waste Off Competition, LCF 'Green Week'



'Placement of use'

Where you may have a specific thought towards application and use of a product, this may not necessarily fit into the same mindset of the user group. It becomes important to place prototypes into contexts of use in order to observe, and not dictate, how a product or method of manufacture should be used.

A method may be sustainable in a 'created' or set scenario, but if this does not work in the natural context of the makers, then applying a method may cause issues. It was important, therefore, for the development of tooling for the manufacture of the fastenings, to work with the values of the local rubber tappers, understanding the cultural dialogue and traditions which exist. This became facilitated through ongoing dialogue with Flavia Amadeu and on a consultation basis with the archive collections at Kew Gardens. Another example is where the use of a product becomes 'thought out' during use. I found within this body of work, that a 'learning by doing' theory was most successful. During the development, prototypes were given to user groups of differing ability, and without prior instruction, the participants were observed in their methods of use and of finding out how to use the fastening. In this way we began to question what it means to be in contact with unfamiliar objects rather than 'known', 'familiar', 'everyday' objects. This was able to further inform what it means to have 'adaptive' or 'specialised' products and whether it is necessary to separate groups according to their ability.

Top 3 learnings from implementing your project

- 1-** Understanding and implementing changes which benefit a particular disability does not mean that you have to resist catering for the 'rest of the population', rather the opposite - it requires critical application so that the product or service may be picked up and used to the benefit of multiple able or disabled groups, so not to restrict or partition communities.
- 2-** Thinking past 'known' methods of material production or manufacture can generate new ways of thinking about a material's application to a specialist use and the impact its process has upon our quality of life.
- 3-** It can be highly rewarding to not only 'place' yourself in the position of the 'other' person or being, but to also work directly with them in a co-design manner in order to draw multiple experiences and perspectives together.

Sharing your project

Shown below are a range of visual depictions for examples of knowledge sharing within the project and as part of dissemination processes. Further to these are the publication of the MA Thesis within Royal Botanical Kew Gardens Library and Archives Collection and obtaining official design rights for the prototype fastening components (OHIM Registered).



Global Disability Innovation Sponsored Workshop

- 11 participants
- Bringing together groups from Charring Cross Hospital, Different Strokes, Sussex Innovation Centre, Royal College of Art and University of the Arts London (UAL).



Left: Tweet from the GDI Hub during a participatory workshop; Right: co-creation activity (Salisbury, 2017)

Bath Stroke Association Workshop

- 10 participants
- Bringing together participants from weekly Stroke Association group meeting and local stroke groups



Left: Discussion for Bra Developments; Right: Participant interacting with Samples

Global Disability Innovation Hub Summit

- 20 participants
- Talk given on the topic of co-creation



Artefact co-created by audience in response to talk (Salisbury, 2017)

Article: South East Business Magazine



Featured with Project Industry Partner, Rust in South East Business Magazine Dec '16/ Jan '17 Issue

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Naidex Trade Show

TRADE STAGE

DAY ONE: TUESDAY 26TH APRIL

10.45 - 11.15	Responsible consumption: The essential guide to The Consumer Rights Act 2015 Sarah Lepak, Director of Governance and Policy, BHTA
11.25 - 12.10	Panel: Surviving in a changing market: New vs Traditional Retail Chair: David Silver, Director, Years Ahead Matt Ward, Head of Retail, Wodequip Assistive Technology Ltd Alastair Gibbs, Owner, TPG Disabilities Ltd Chris Manning, Director and General Manager, Kinetec Medical Products UK Ltd
12.20 - 13.05	Why your business needs social media Kaz Laljee, Director, Soc-Med Ltd and Founder, Positive About MS
13.15 - 14.00	How to get sales using social media Warren Knight Social Media Strategist Digital Marketing Ecommerce Sales Entrepreneur Speaker Trainer Author Coach
14.10 - 14.40	All you need to know about Personal Injury Trusts Tom Hall, Associate Solicitor, Hyphen Law
14.50 - 15.35	Case Study: Collaboration - The Able Label Katie Ellis, Founder and Managing Director, The Able Label Delia Naylor, Access Independent Genise Turnbull, Different Strokes Laura Salisbury, London College of Fashion

14.50 - 15.35

Case Study: Collaboration - The Able Label

Katie Ellis, Founder and Managing Director, The Able Label

Delia Naylor, Clinical Director, Access Independent

Genise Turnbull, Different Strokes

Laura Salisbury, London College of Fashion

Naidex Trade Show Case Study Talk: with Industry Partner The Able Label

What has it meant to your institution to be a Green Gown Award finalist?

"We are delighted that London College of Fashion, UAL has been nominated as a Finalist in three Green Gown award categories this year. We strive to embed sustainability in all that we do, using fashion, as a discipline, to drive change, build a sustainable future and improve the way we live. This recognition demonstrates the determination and skill of our staff, students, alumni and partners in realising sustainability aspirations to make positive change a reality."

- Professor Frances Corner OBE, Head of London College of Fashion

Further information

laura.salisbury@network.rca.ac.uk or l.salisbury@arts.ac.uk