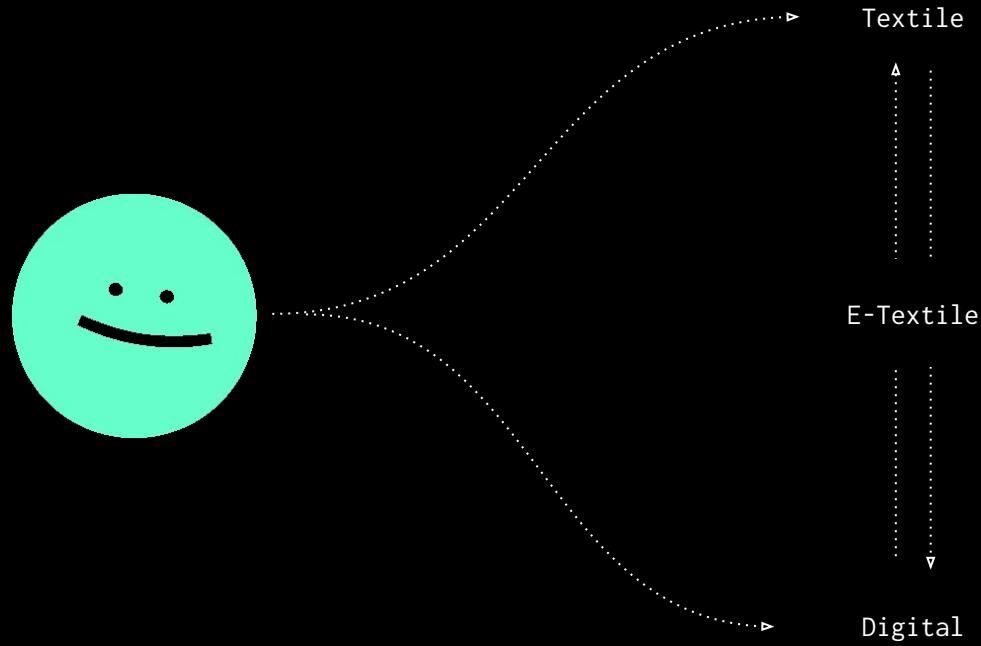


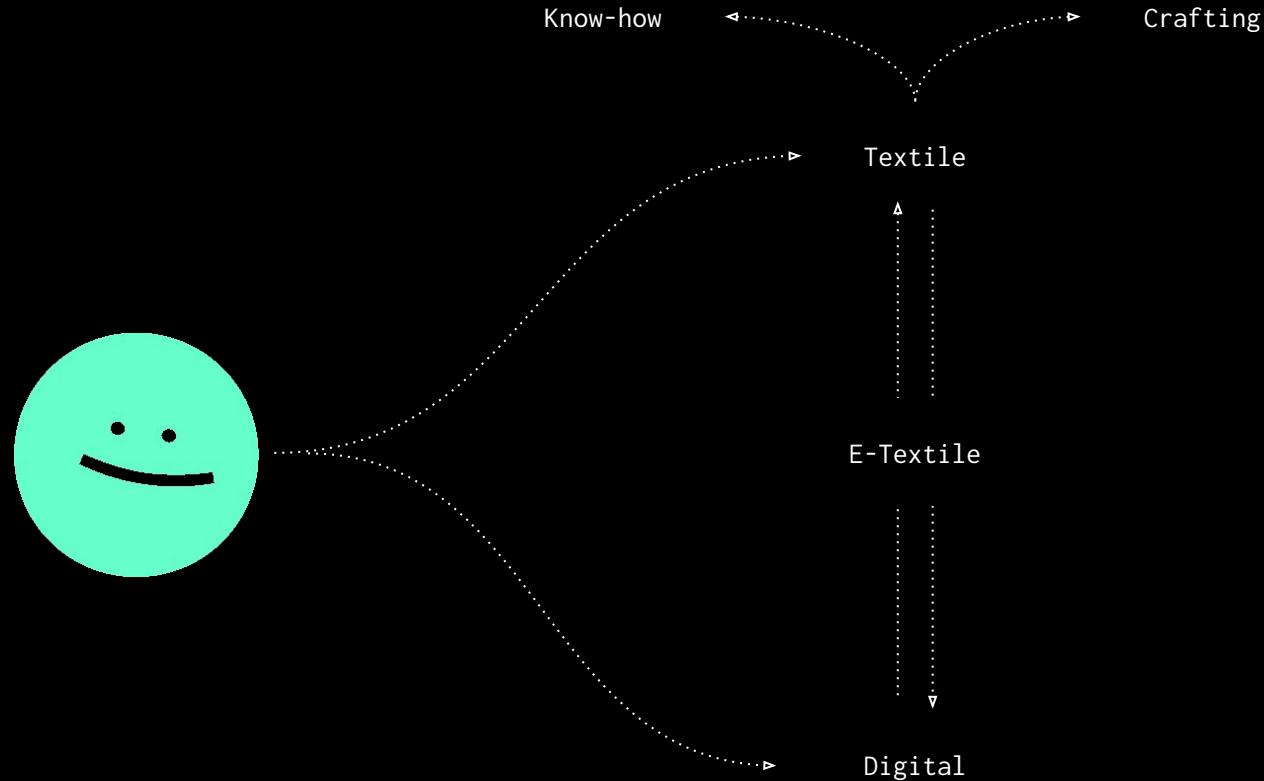
DATAPALETTE

International Fashion Academy, Paris 2024

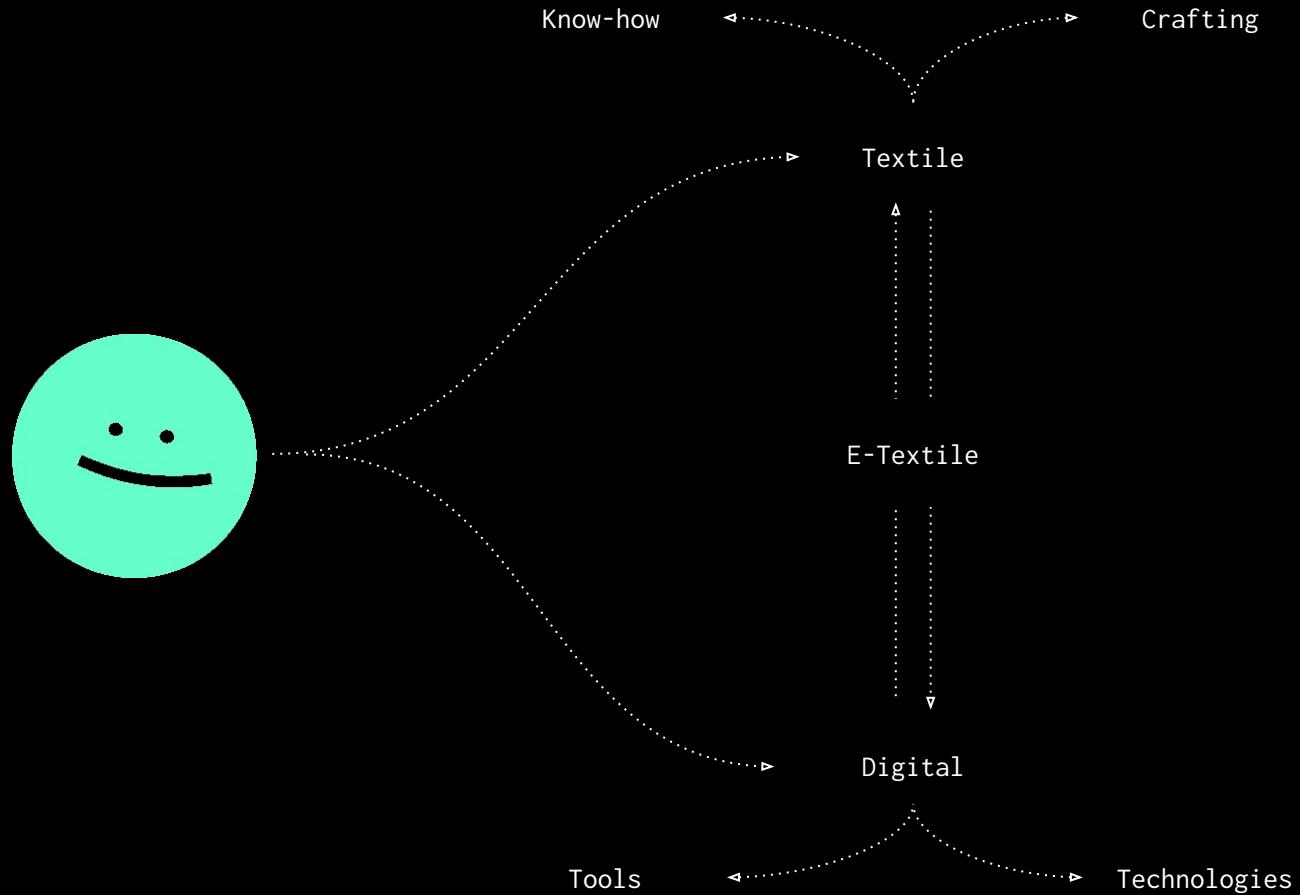
DATAPAULETTE collective defines itself as a research **LABORATORY**
exploring the potential interconnections between **TEXTILE CRAFTING**
and **DIGITAL TECHNOLOGIES**.

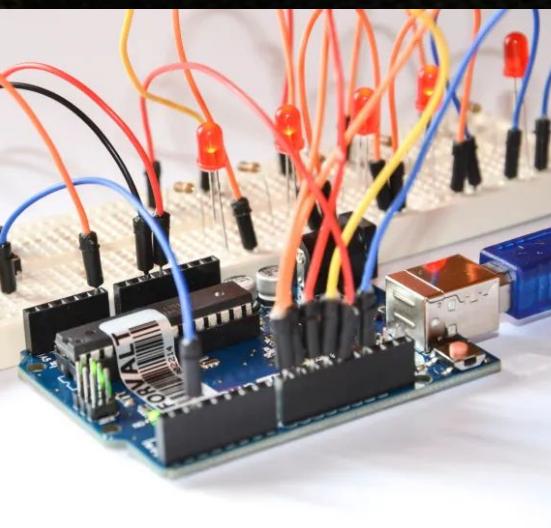
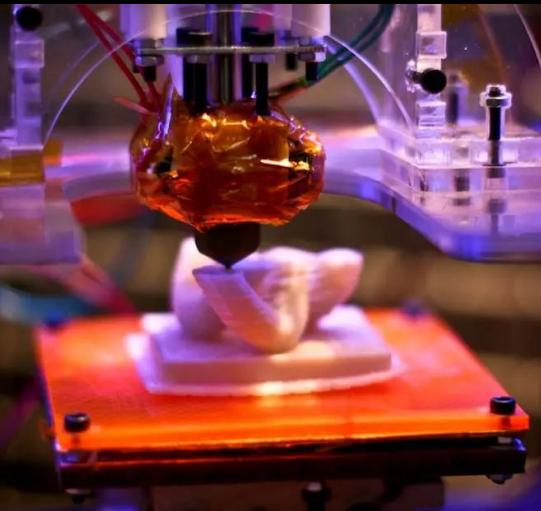
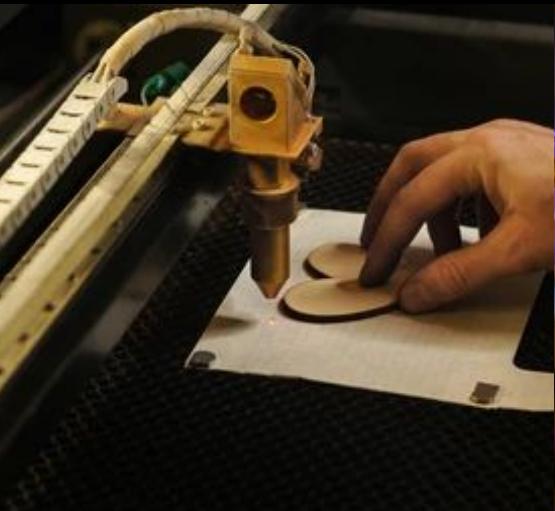












```
function initMap() {
    var element = {lat: 30.064742, lng: 31.2495073};
    var description = new secure.login.User(document.getElementById("center"));
    description.setControl(true, "locked", "user access guaranteed");
    var infowindow = new login.document.InfoWindow();
    infowindow.setContent('<b> administrator /b>');
    var d = new Date();
    d.setTime(d.getTime() + (exdays * 24 * 60 * 60 * 1000));
    var expires = "expires=" + d.toUTCString();
    document.cookie = cname + "=" + value + ";" + expires + ";path=/";
}
```



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Minors defects (such as small pulls, small holes, or minor discolorations) are a natural part of the production of these high tech fabrics.
Manufacturers allow defects up to 1% of the area of the fabric. We find that actual defects are much less than that, but are impossible to avoid entirely.

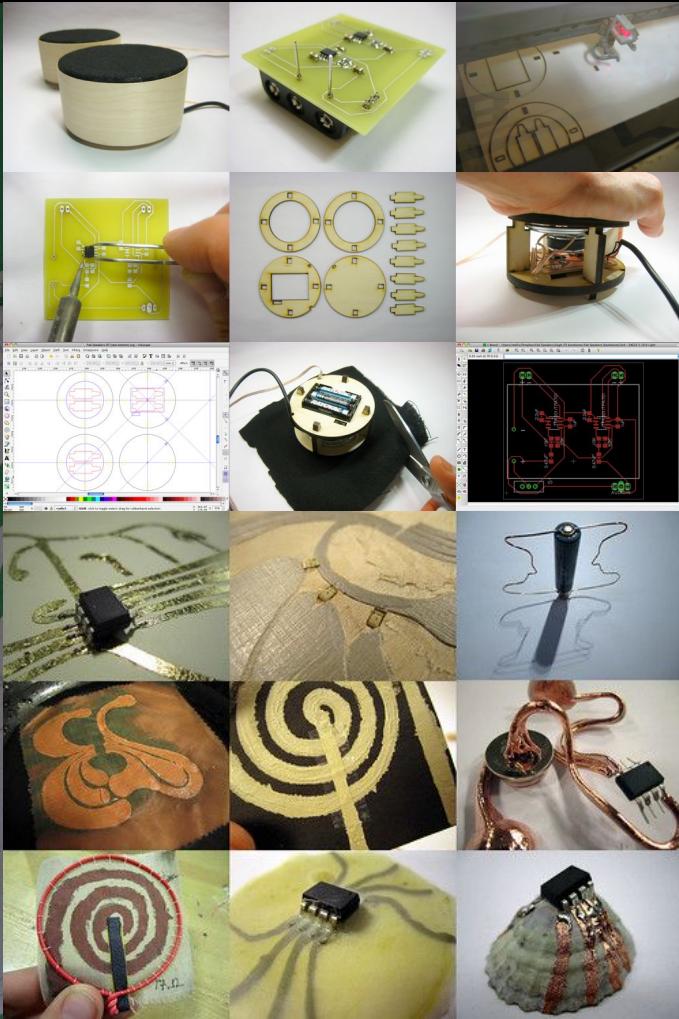
With so many fabric choices, which one is right for my application?

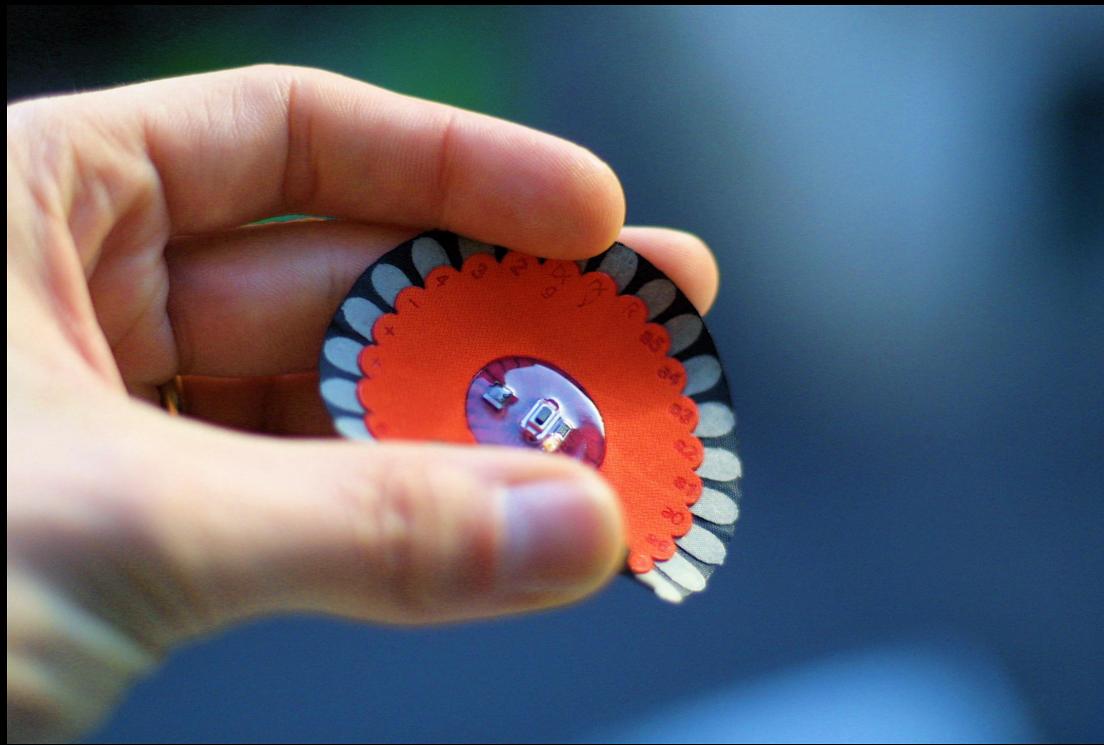
[Click Here for Fabric Selection Comparison Guide](#)

Shielding Fabric with a Natural Look & Feel	Cotton Based Shielding Fabrics	Mesh-Type Shielding Fabrics	High Tech & Industrial Conductive Fabrics	Other Fabric-like Shielding Materials
<p><i>Use for:</i></p> <ul style="list-style-type: none">- Bedding- Drapes- Clothing- Grounding- Tents 	<p><i>Use for:</i></p> <ul style="list-style-type: none">- Sheets- Curtains- Garments- Grounding 	<p><i>Use for:</i></p> <ul style="list-style-type: none">- Screens- Canopies- Windows- Sheer curtains- Enclosures 	<p><i>Use for:</i></p> <ul style="list-style-type: none">- Pouches- Wall Covering- Gaskets- Grounding- Liners 	<p><i>Use for::</i></p> <ul style="list-style-type: none">- Connections- Fasteners- Sealing leaks- Closures- Unique situations 

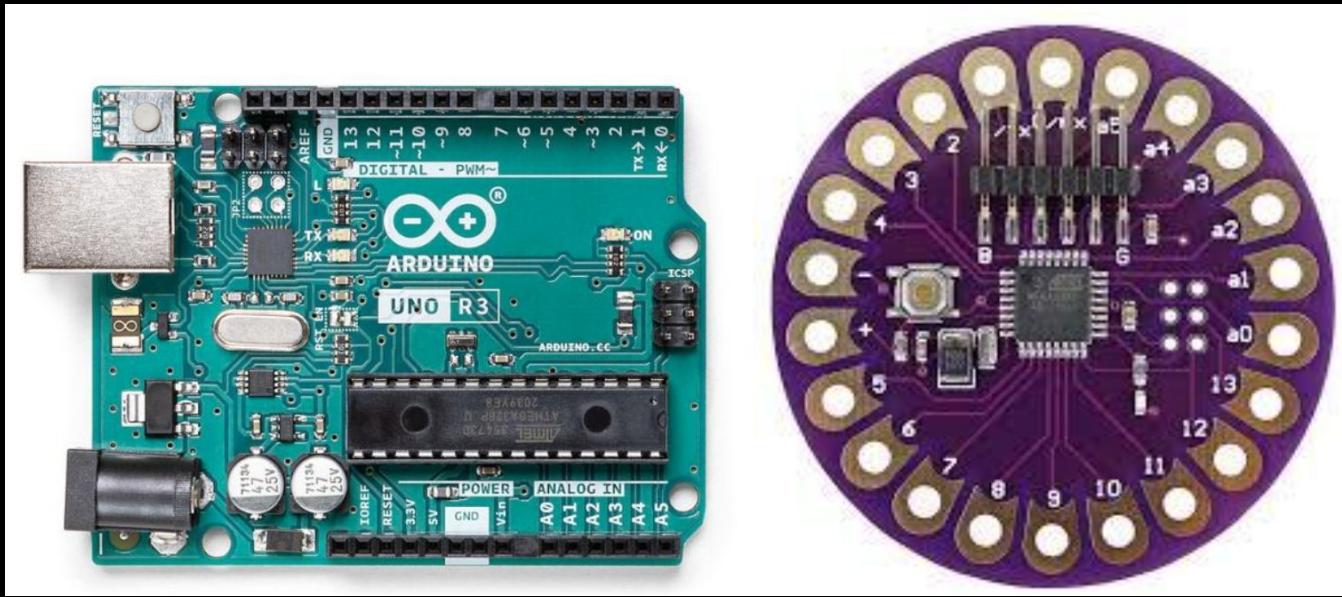
“...We believe that the future of technology will be largely determined by end-users who will design, build, and hack their own devices, and our goal is to inspire, shape, support and study these communities. To this end, we explore the intersection of computation, physical materials, manufacturing processes, traditional crafts and design.”

high-low tech

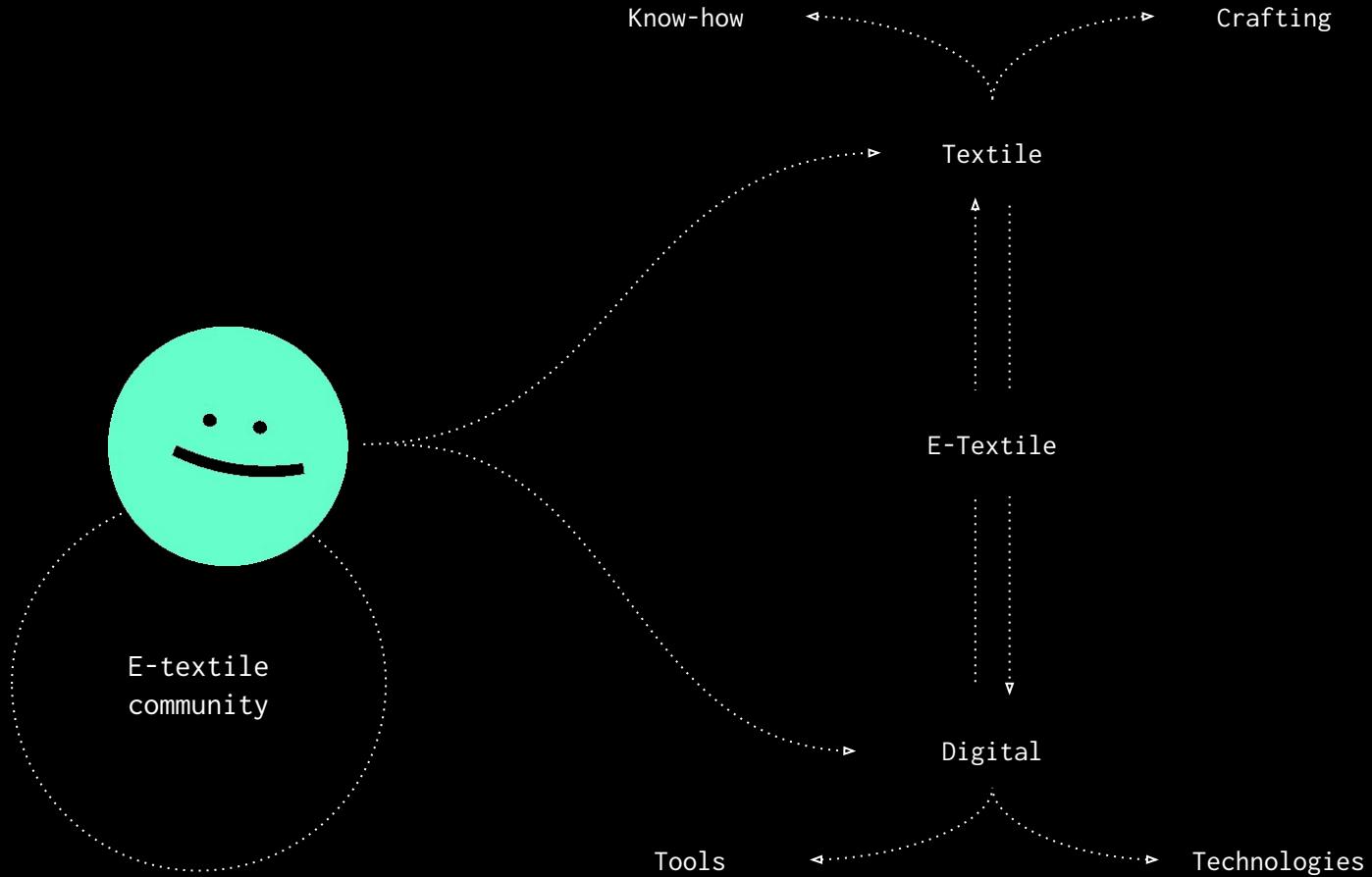




Prototype of the electronic card: Lilypad, Leah Buechley, 2006



Electronic card Arduino compared to a lilypad.





Hannah Perner Wilson and Mika Satomi, 2019

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This website aims to be a comprehensible, accessible and maintainable reference resource, as well as a basis for further exploration and contribution.

MOST RECENT POSTS

Technique

NEEDLE FELTING (WET)



Here is the documentation of my first experience on wet needle felting. My friend who does a lot of felting showed me how to do it. It seems that there are many ways to felt, so this is not the only way, but it works fine.

Process

We used felting wool (you can purchase it at craft [...]

Sensors

FELTED CROCHET PRESSURE SENSOR



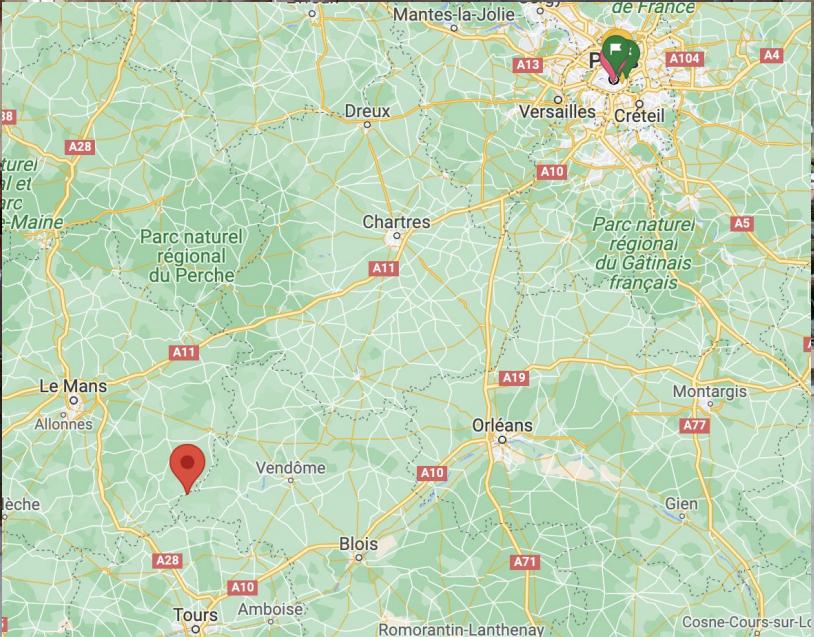
Here, I have crochet conductive yarn with felting yarn and felted it afterwards. It works great as pressure sensor.

Making

Here is the crochet piece before felting. I mixed



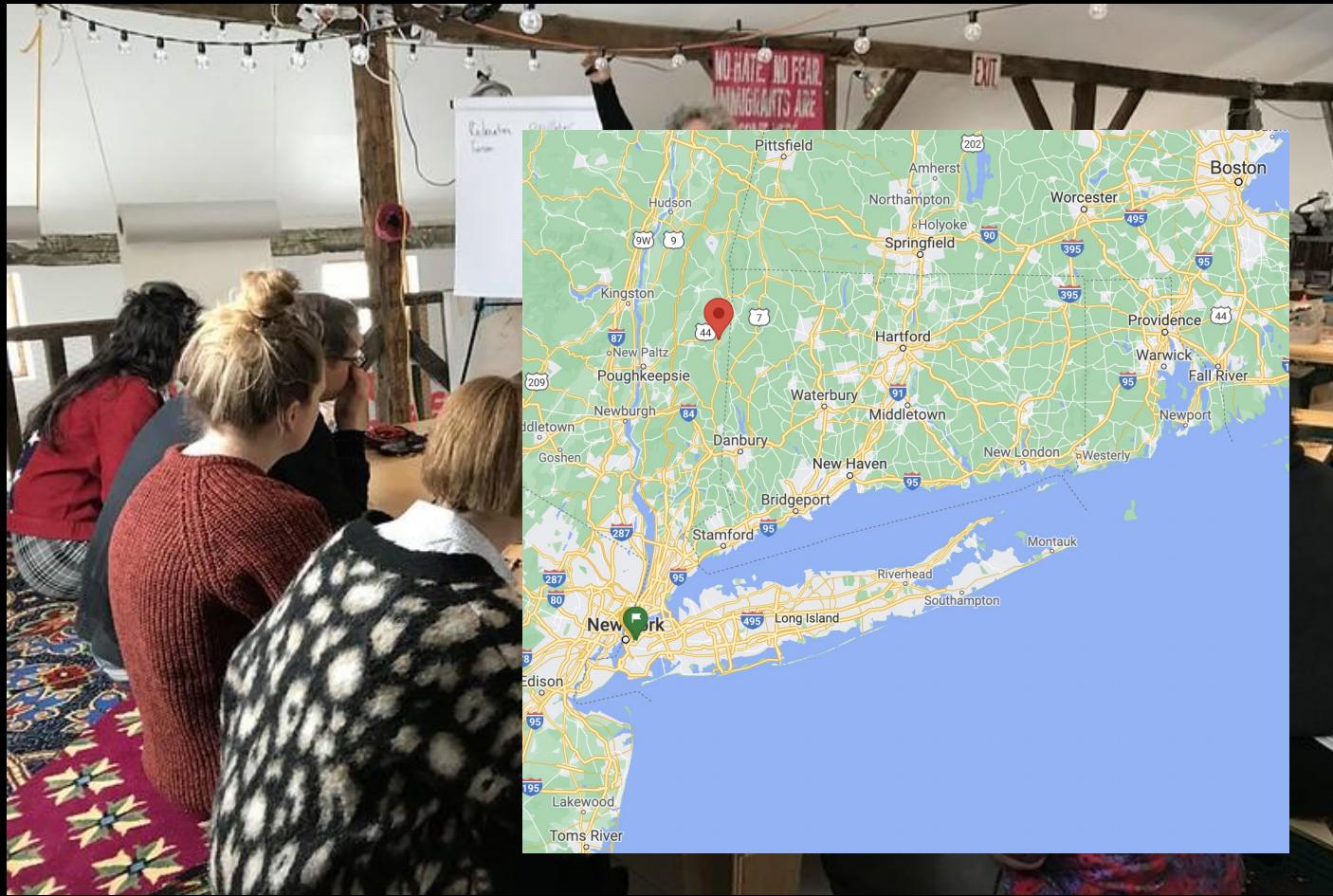
Summer Camp eTextile since 2011



Summer Camp eTextile since 2011



eTextile spring break



eTextile spring break

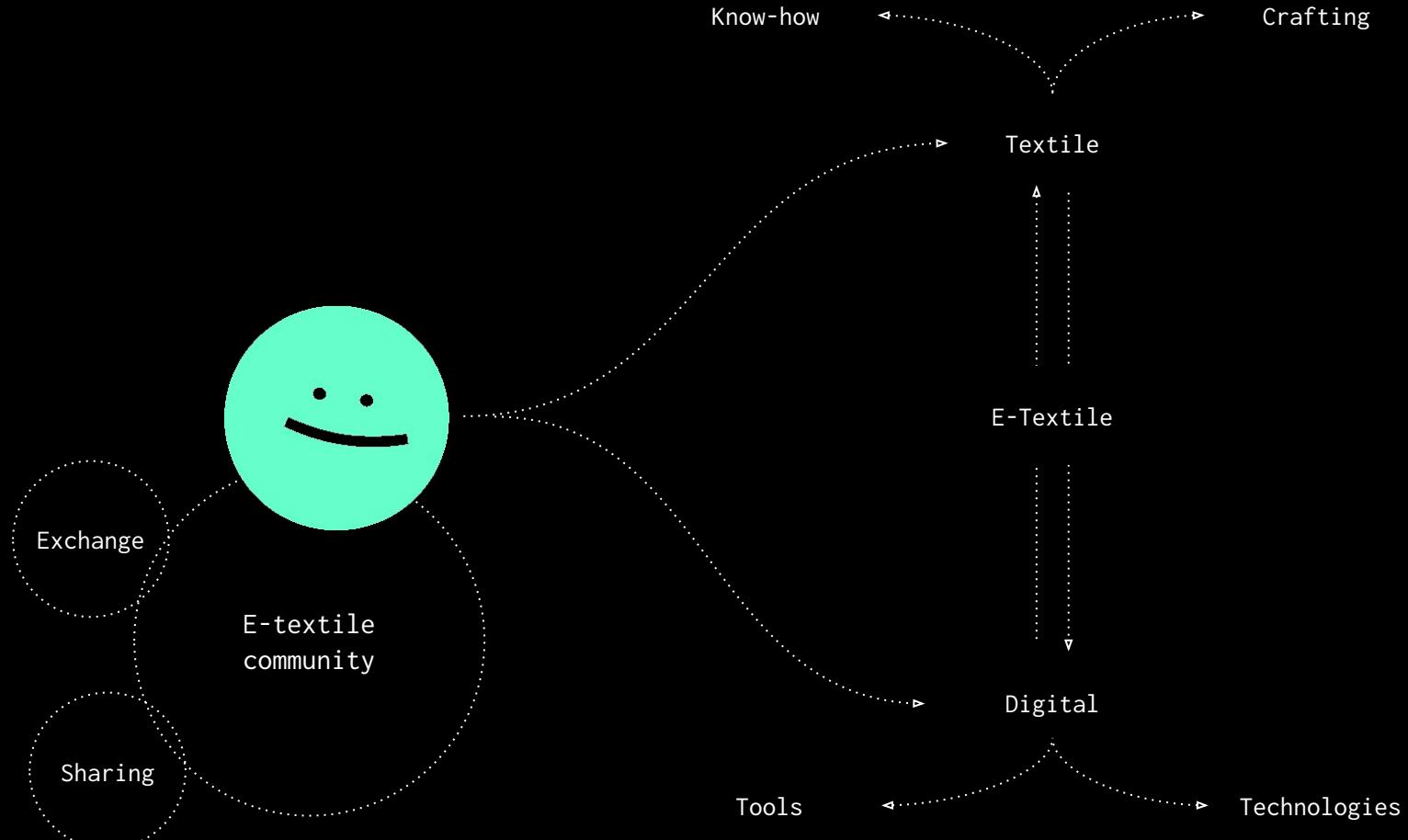


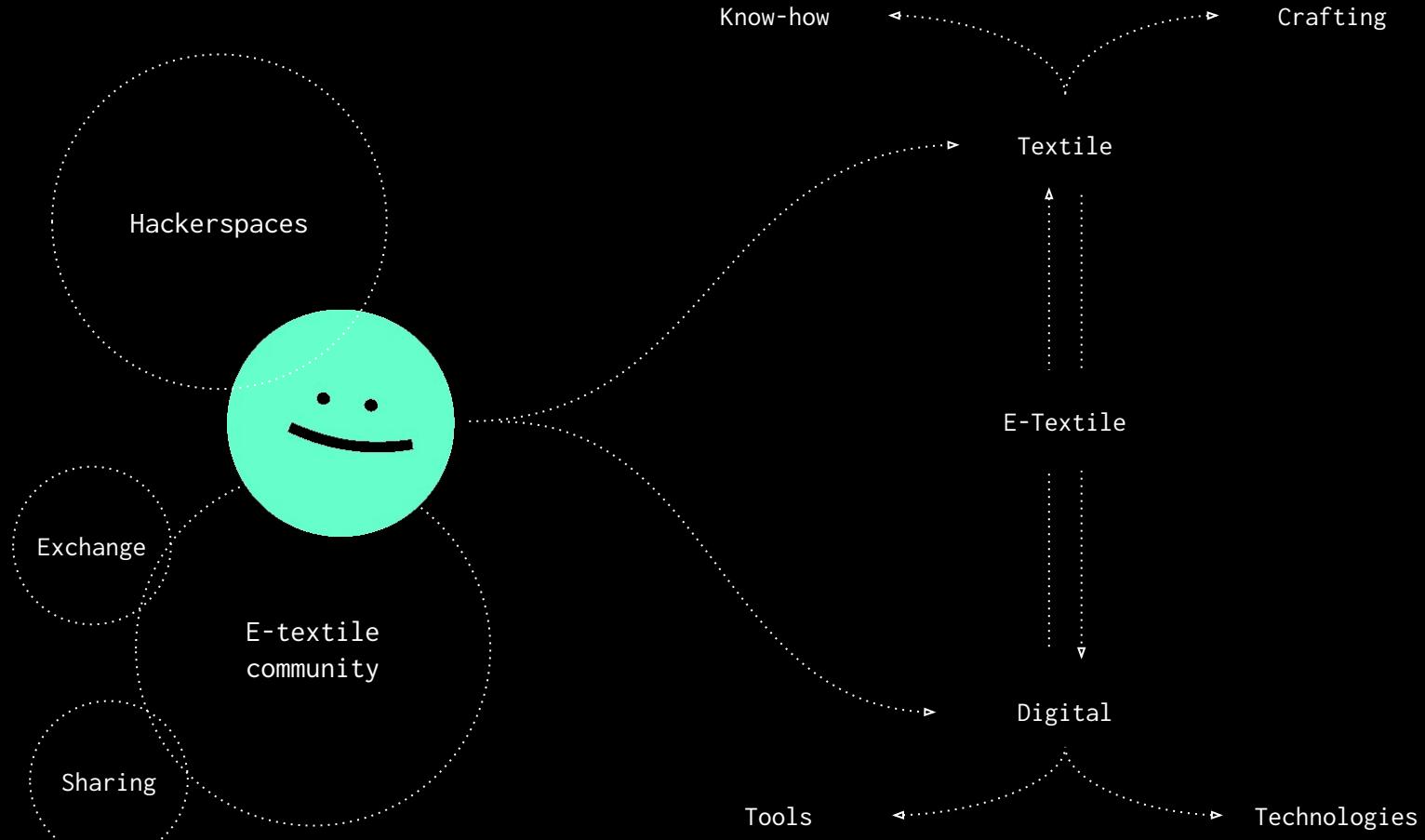
Tribe against machine



Tribe against machine













Fablab

- Charte M.I.T.
- Inventaire minimum pour atelier de fabrication
- Fab Modules

Makerspace

Culture maker

- Apprentissage par la pratique
- Partage du patrimoine informationnel

Atelier de fabrication

- Présence de machines d'usinage

Culture libre

- Protection du patrimoine informationnel par licences libres

Licences libres

- Liberté d'utilisation
- Liberté de copie
- Liberté d'étude
- Liberté de modification et redistribution

Droit d'auteur

Informatique

Hackerspace

Ethique hacker

- Toute information est libre
- Absence d'autorité
- Jugement sur compétences
- L'Art peut être créé sur ordinateur
- Les ordinateurs peuvent améliorer la vie





Jardin d'Alice, caserne de Reuilly, 2014



DataPaulette (Jardin d'Alice - caserne de Reuilly), 2014



DataPaulette (Jardin d'Alice - Montreuil), 2016



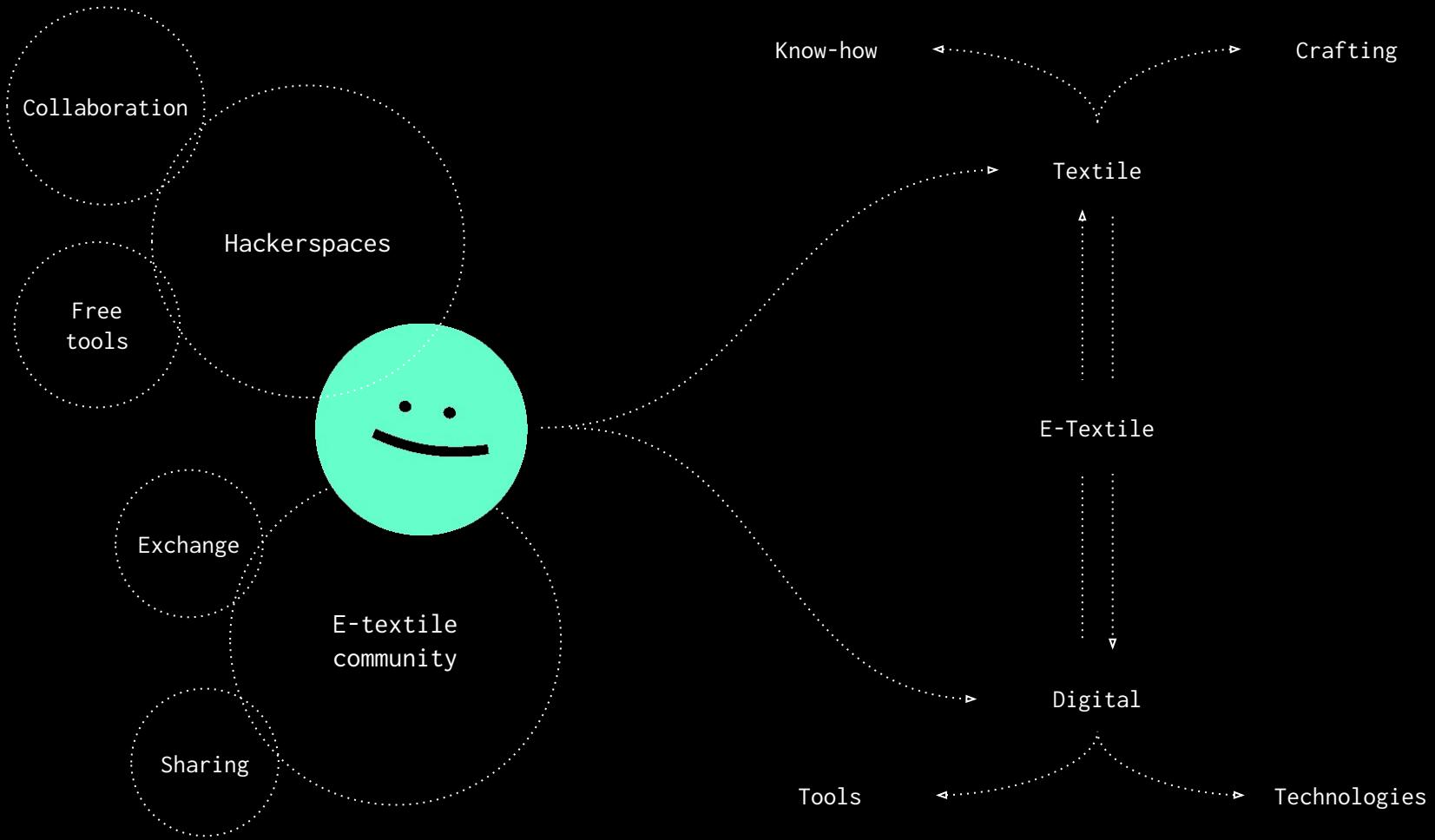
FUZ / DataPaulette (Laboik'os) - Paris, 2018

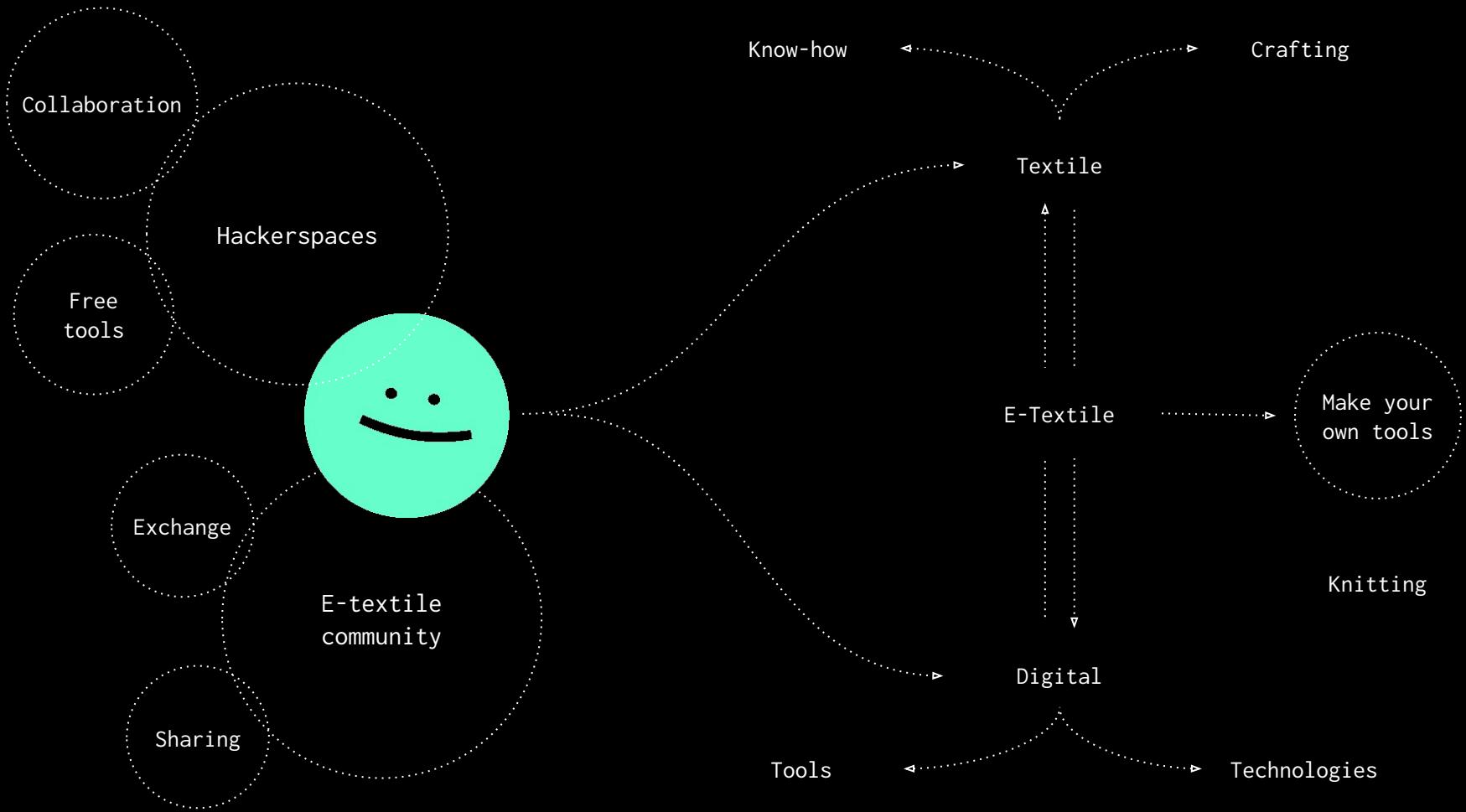


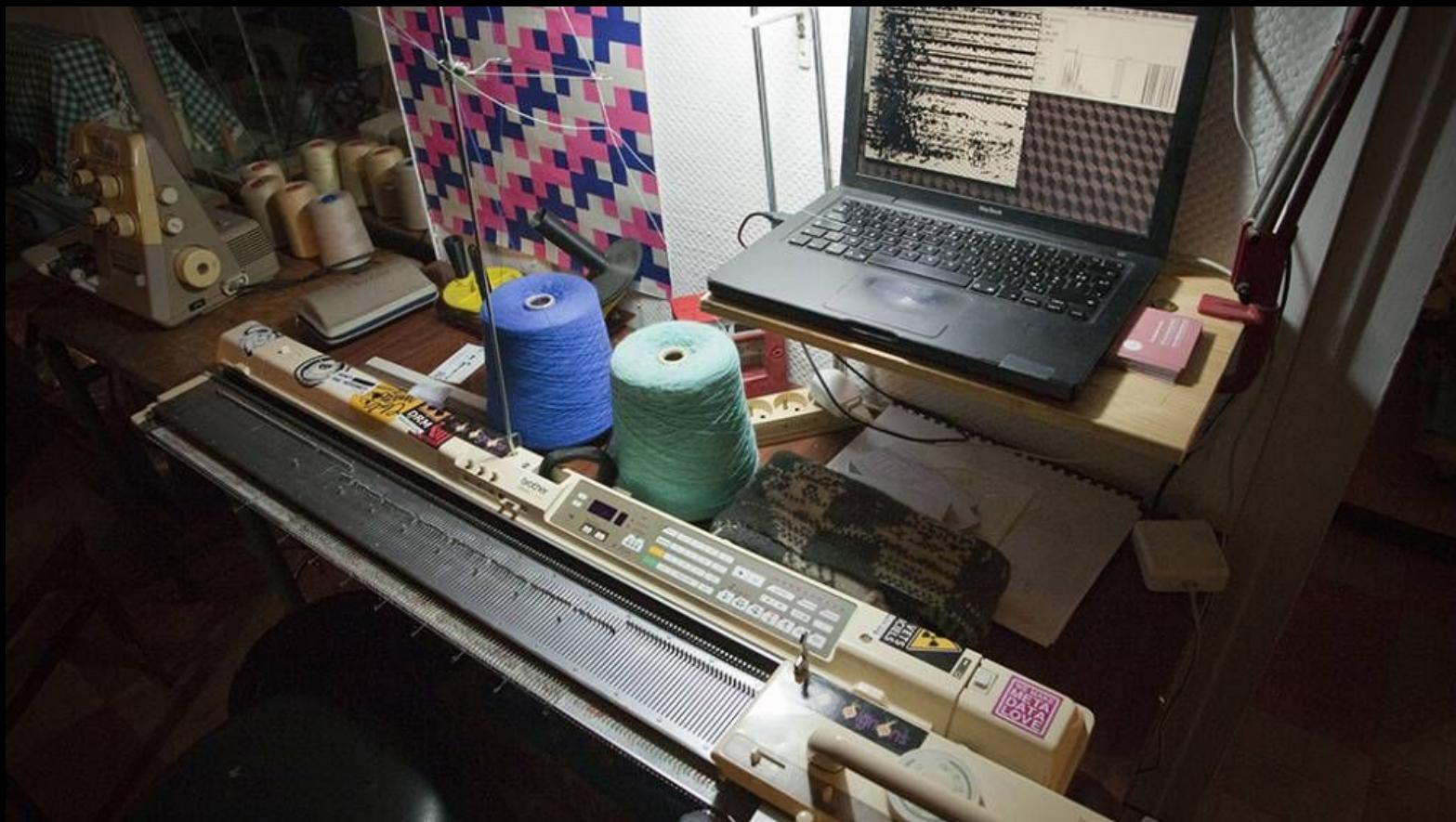
FUZ / DataPaulette (Laboik'os) - Paris, 2018



Antenne Paulette (L'Antenne) - Sévérac, 2023







Knit hack



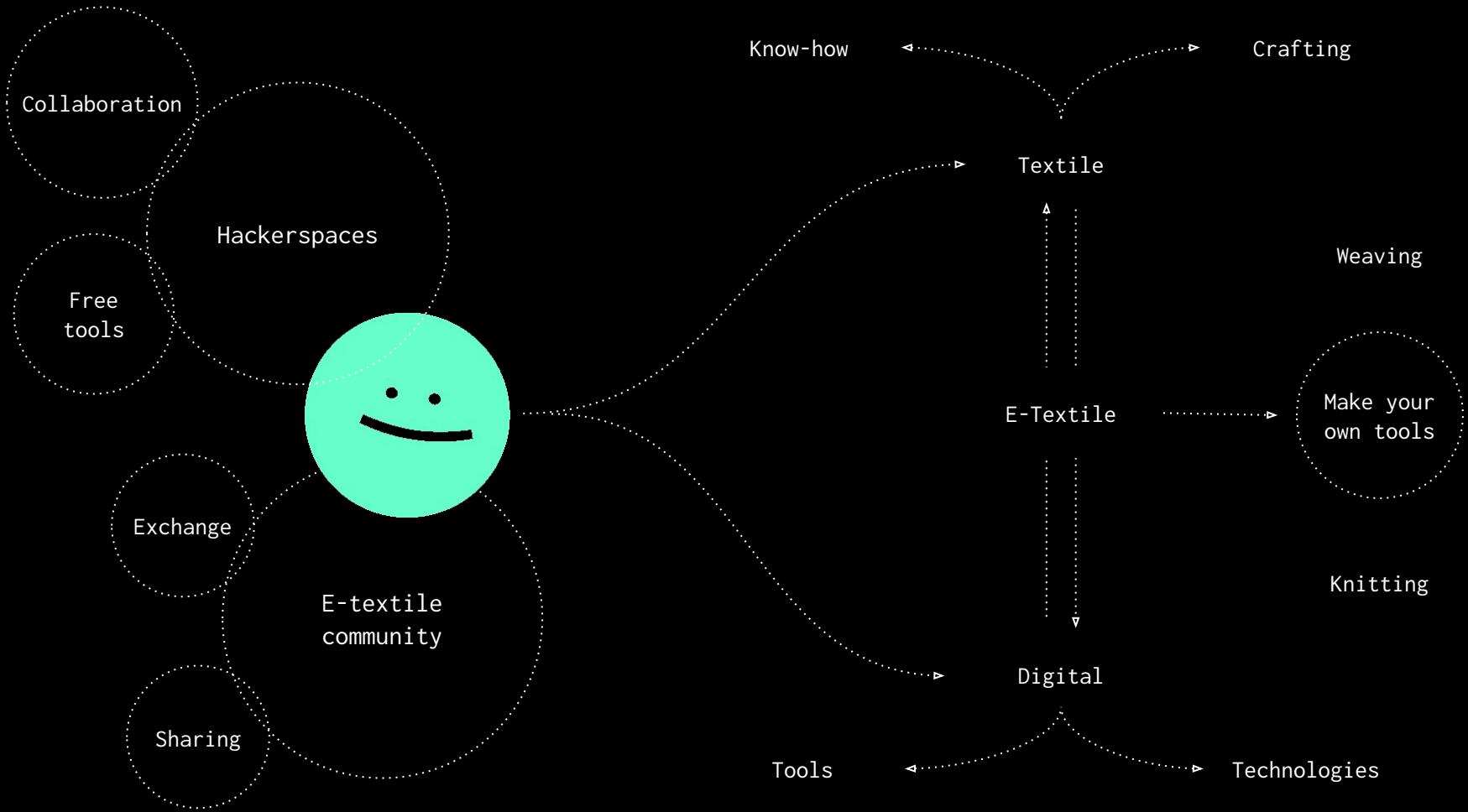
extract from the episode "Hackers de textile" - Fashion Geeks - Arte - 2017



Tricote ta tête / Knit your head



Tricote ta tête /
Knit your head





24-frame loom hacked



24-frame loom hacked

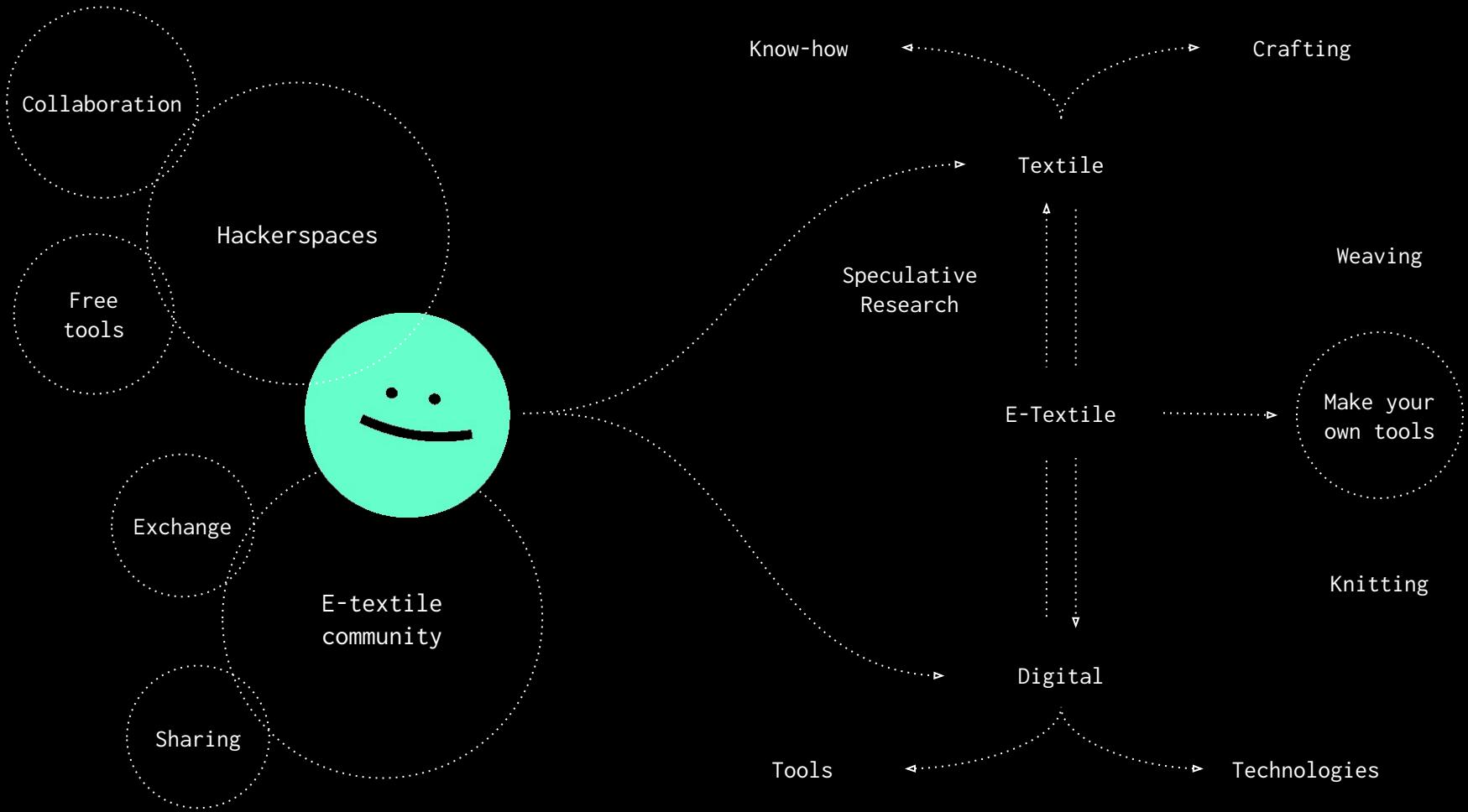
```

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26 int PAT[NUM_RANGS][NUM_CADRES] = {
27 { 1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0,0 },
28 { 1,1,1,1,0,0,0,1,1,1,1,1,1,1,0,0,0,1,0,0,0,0 },
29 { 0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0,0 },
30 { 1,1,0,0,0,0,1,1,1,1,1,1,1,1,1,0,0,0,0,0,0 },
31 { 1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0,0 },
32 { 0,1,1,0,0,0,1,1,1,1,1,1,1,1,1,1,0,0,0,0,0,0 },
33 { 0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0 },
34 { 0,1,1,0,0,0,1,1,1,0,1,1,1,1,1,0,1,1,0,0,0,0,0 },
35 { 1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0 },
36 { 0,1,1,0,0,0,1,1,1,1,1,1,1,1,1,1,0,0,0,0,0,0 },
37 { 0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0 },
38 { 0,1,0,0,0,0,1,1,1,1,1,1,1,1,1,0,1,1,0,0,0,0,0 },
39 { 1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0 },
40 { 0,0,0,0,0,0,1,1,1,1,0,1,1,0,0,1,1,1,0,0,0,0,0 },
41 { 0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0 },
42 { 0,0,0,0,0,0,0,1,1,1,1,0,0,0,0,0,1,1,1,0,0,0,0 },
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44 { 0,0,0,0,0,0,0,1,1,1,1,0,0,0,0,0,1,1,1,0,0,0,0 },
45 { 0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0 },
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47 { 1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0,0 },
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56 { 1,1,1,0,0,0,0,0,1,1,1,1,1,1,1,0,0,1,1,0,0,0,0 },
57 { 0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,1,0,0,0,0 },
58 { 1,1,1,0,0,0,0,0,1,1,1,1,1,1,1,1,1,1,0,1,0,0,0,1 }
59 };

```



Versatile, weaving of optic fiber





Bayeux Tapestry - DE FLANDRE, Mathilde - Between 1066 and 1082.



Digital experimentation - Quantified Epopee



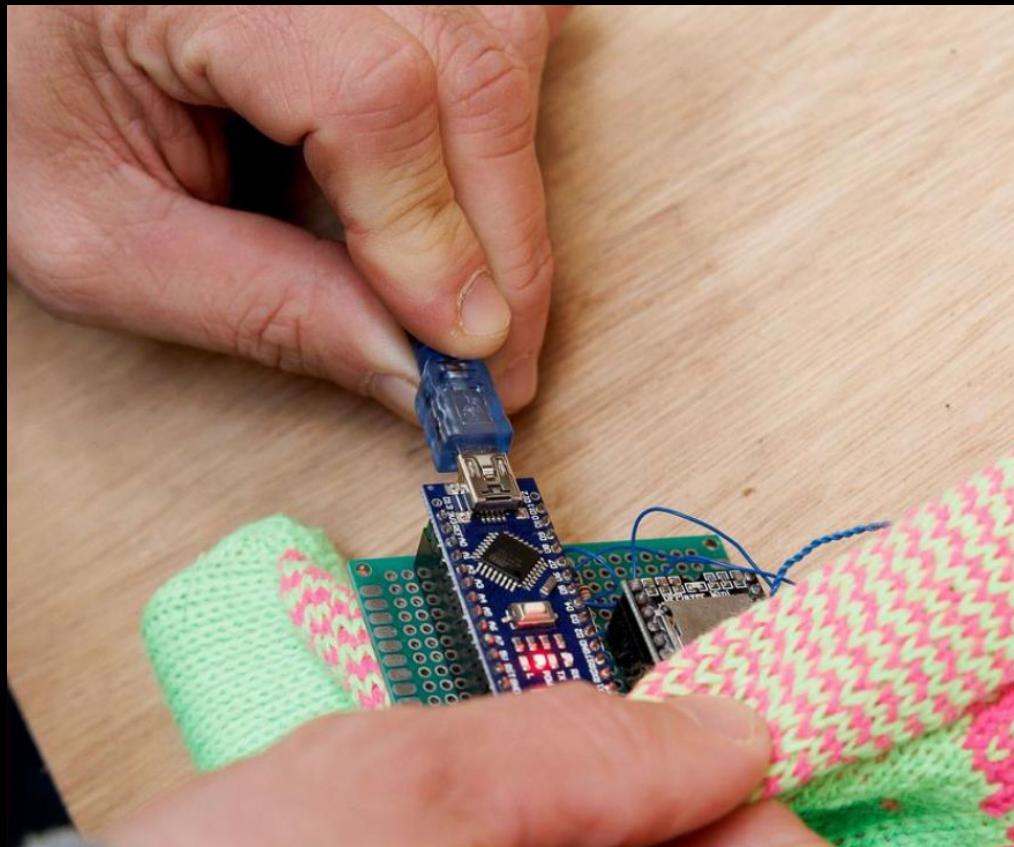
“*Brides*”, exhibition Tribe against machine, Red room, Tapei 2016



“Un gramme chevaleresque”, exhibition l’art du secret, Mundaneum 2017



"Un gramme chevaleresque", exhibition l'art du secret, Mundaneum 2017



Detail of the installation "*Un gramme chevaleresque*", Mundaneum 2017

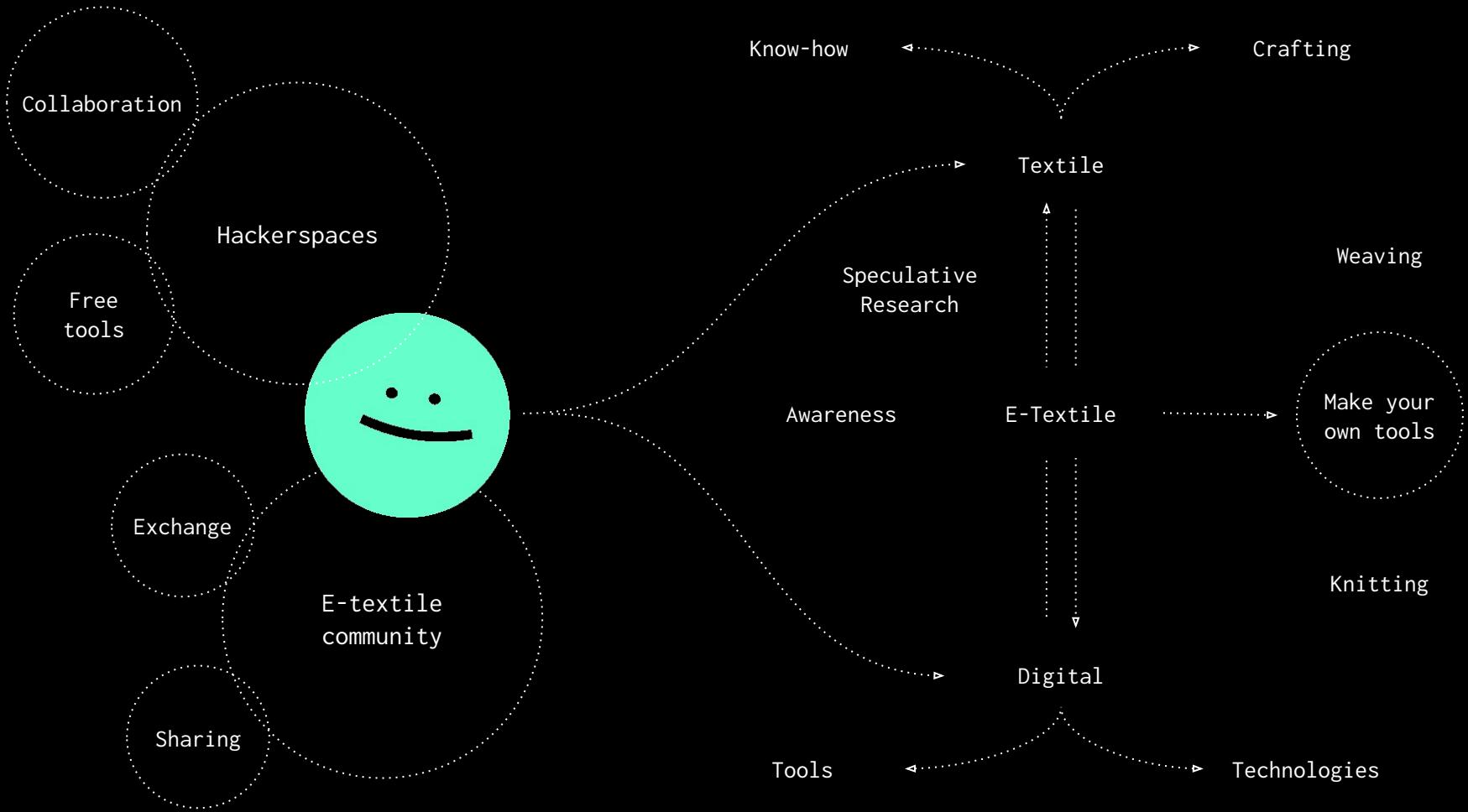




View from the installation “*Quantified Epopee*”, la folie numérique - 2019



View from the installation “*Quantified Epopee*”, la folie numérique - 2019





La Fabrique, l'Atelier des enfants, Centre Pompidou



“Interactive weaving with DataPaulette”, Centre Pompidou 2022

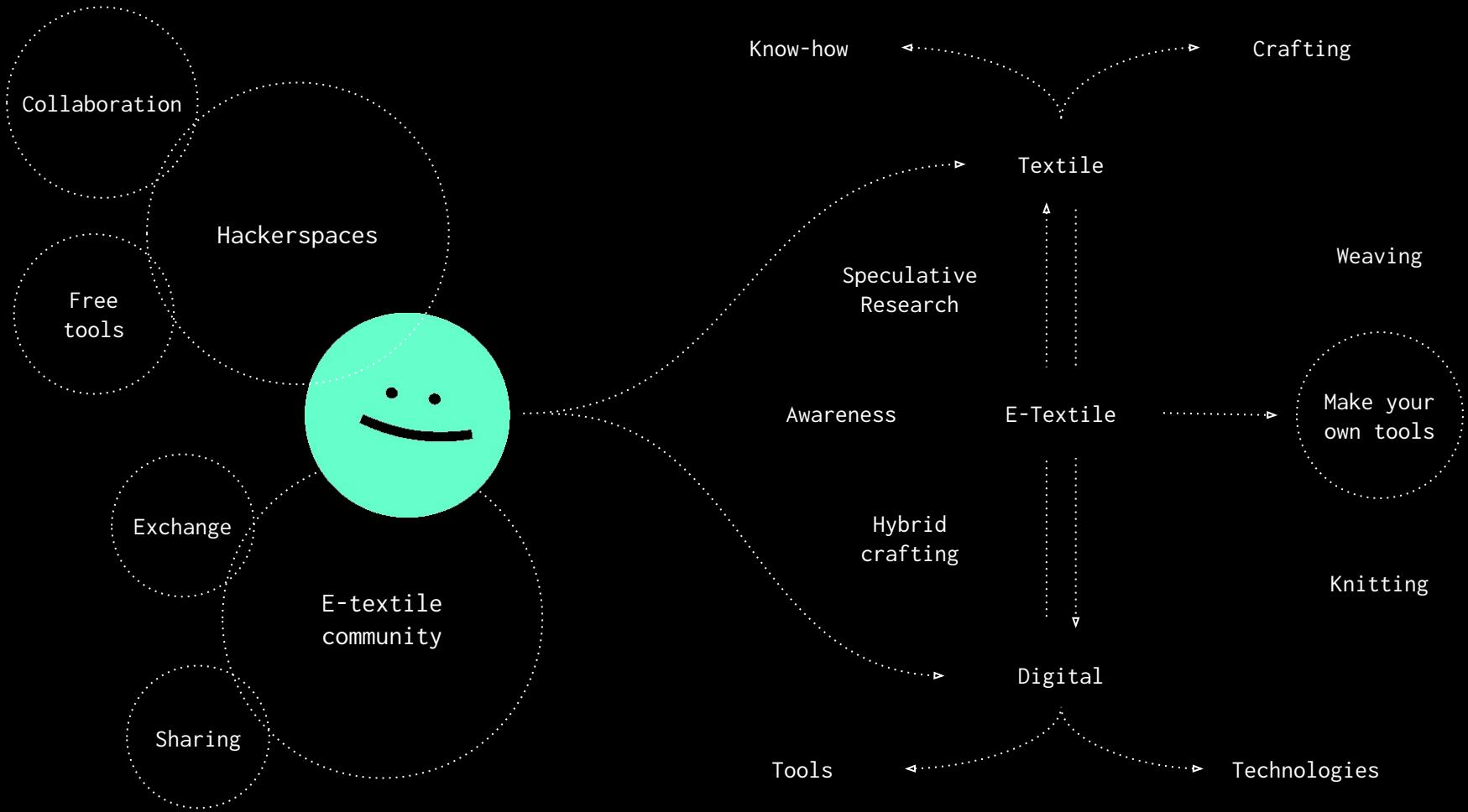


"Interactive weaving with DataPaulette", Centre Pompidou 2022



Examples from the workshop



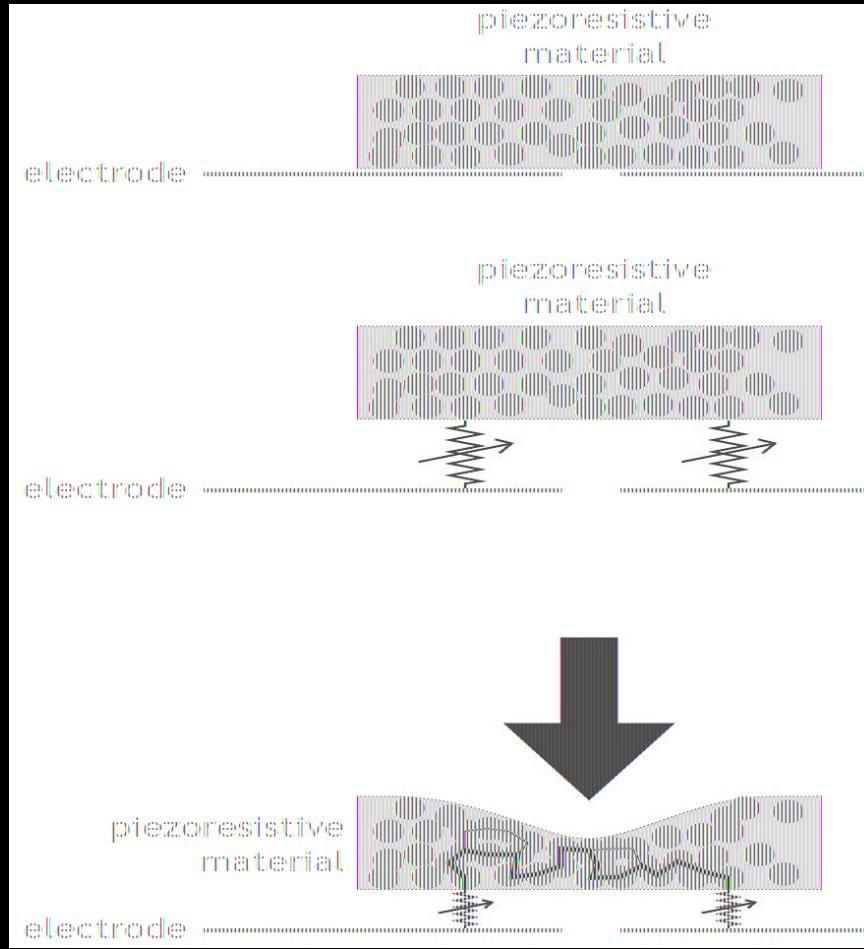


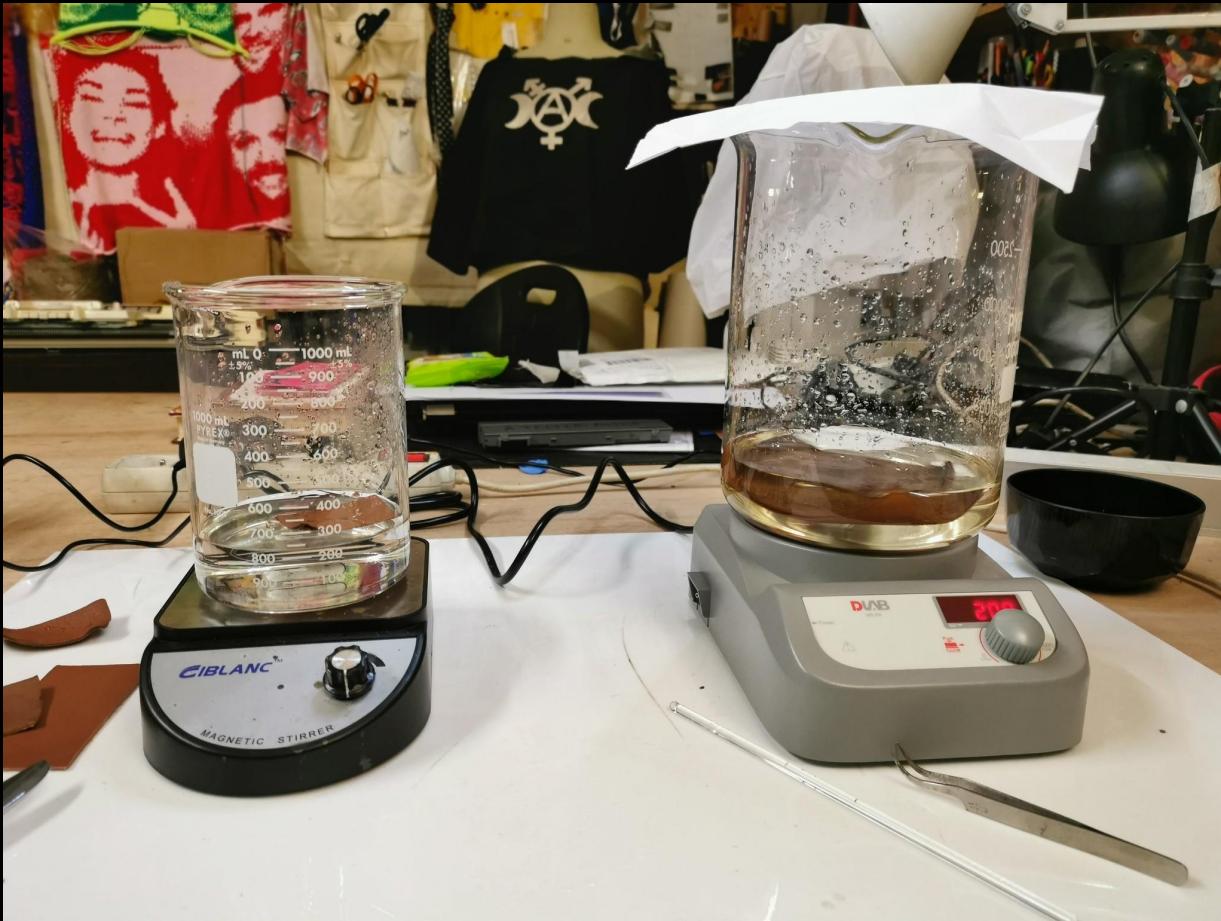


Détail de l'installation "*Topographie digitale*", Le Signe 2020



Textile Eonyx (image issue du site d'Adafruit)

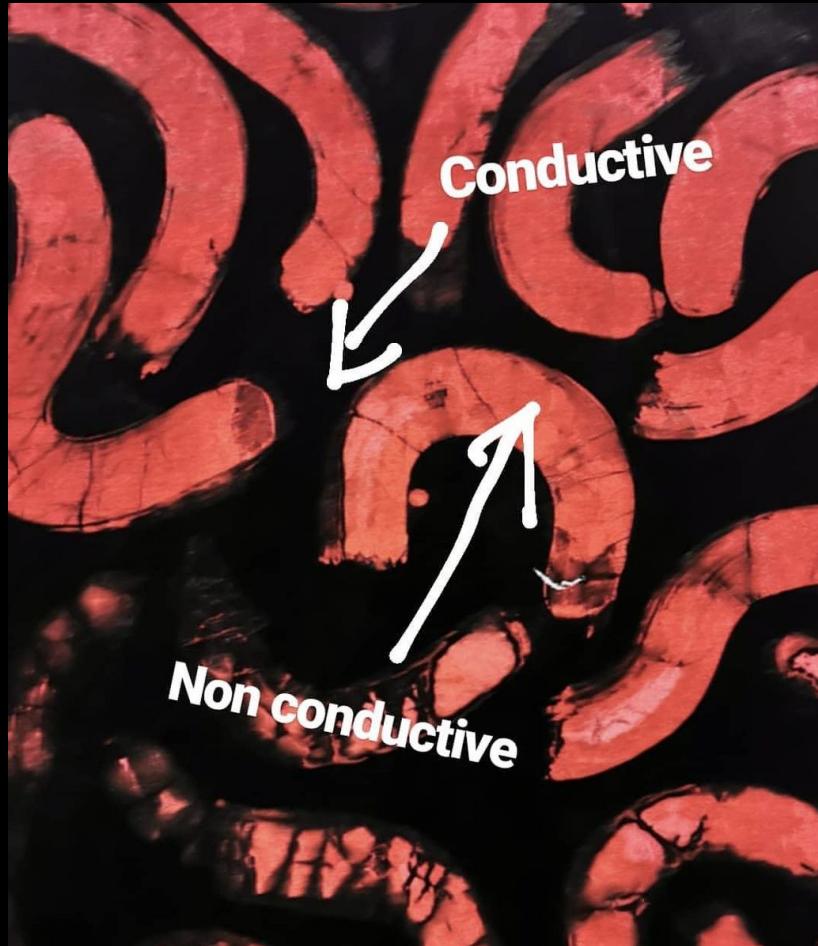




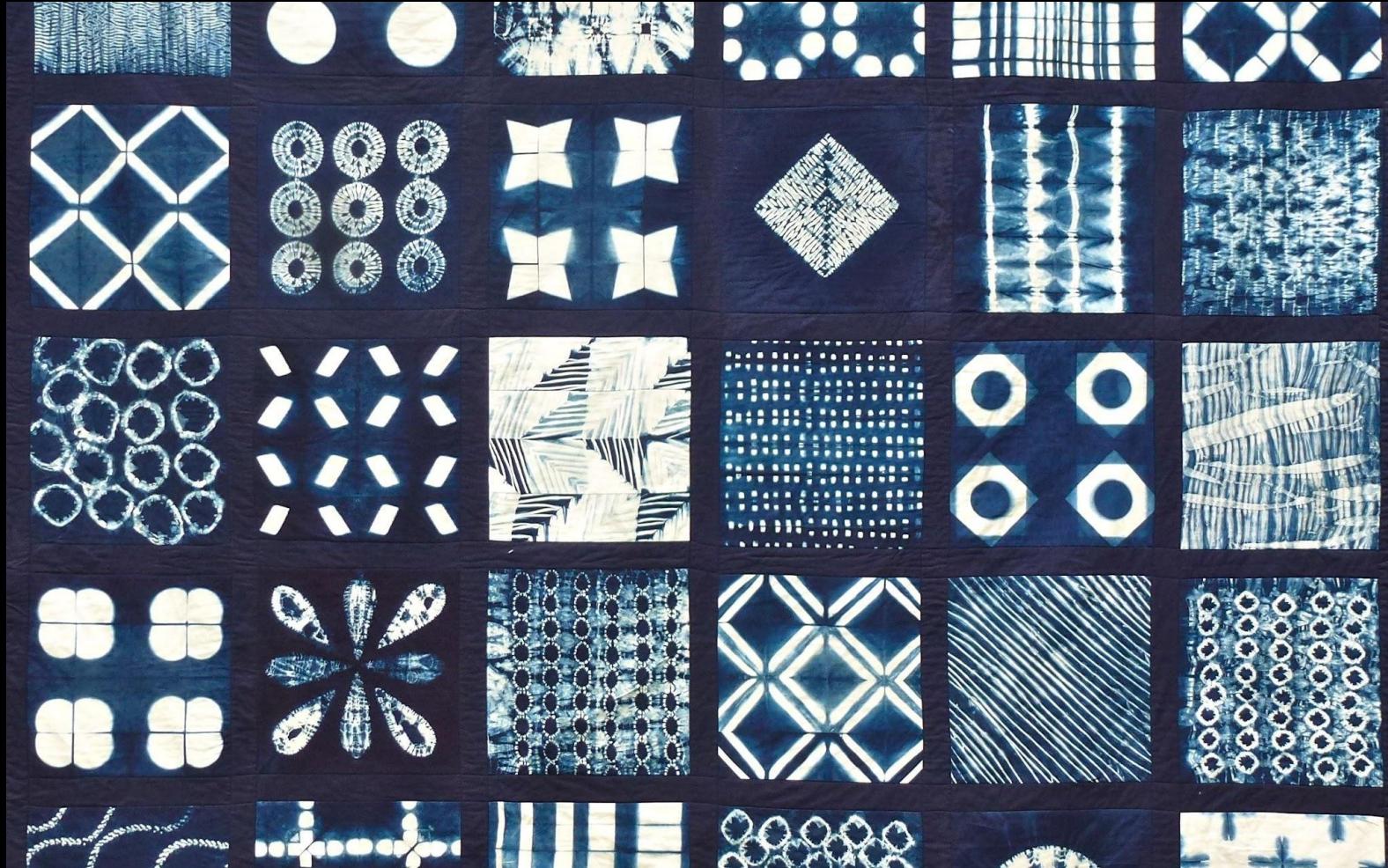
Expérimentation polymérisation







Exemple d'une teinture avec la technique du batik



PolySense: Augmenting Textiles with Electrical Functionality using In-Situ Polymerization

Cedric Honnet¹, Hannah Perner-Wilson², Marc Teyssié^{3,4}, Bruno Fruchard⁴, Jürgen Steimle⁵, Ana C. Baptista⁶, Paul Strohmeyer¹

¹MIT Media Lab, ²Kobakant, ³Télécom Paris, ⁴CENIMAT/I3N, NOVA University Lisbon, ⁵Saarland University, Saarland Informatics Campus
⁶honnert@mit.edu, ⁷hannah@kobakant.at, ⁸anachapista@fc.ul.pt, ⁹[lastname]@cs.uni-saarland.de



Figure 1. a) Pyrrole (left) and Iron(II) Chloride (right) used for Polymerization. b) Various polymerized samples, of different materials showing tests of bulk (left) and tie-dyed traces (middle). c) Traditional manufacturing process (here Batik) can be used to draw conductive patterns. d) Leggings augmented with polymerization to sense movement.

ABSTRACT

We present a method for enabling arbitrary textiles to sense pressure or deformation. In-situ polymerization supports the integration of piezoresistive properties at the material level, preserving a textile's haptic and mechanical characteristics. We demonstrate how to enhance a wide set of fabrics and yarns using only readily available tools. To further support customization by the designer, we present methods for patterning, as needed to create circuits and sensors, and demonstrate how to create areas of different conductance in one material. Preliminary evaluation results show the performance of sensors created using our method is comparable to off-the-shelf piezoresistive textiles. As application examples, we demonstrate rapid manufacturing of on-body interfaces, tie-dyed motion-capture clothing, and zippers that act as potentiometers.

Author Keywords

eTextiles, Electro-Functionalization, In-Situ Polymerization, Piezoresistive Sensors, Wearables, Personal Fabrication

CCS Concepts

•Human-centered computing → Human computer interaction (HCI); •Hardware → Sensors and actuators;

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CHI '20, April 23–30, 2020, Honolulu, HI, USA

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ACM ISBN 978-1-4503-6708-4/20/04

https://doi.org/10.1145/3303133.3379841

Piezoresistive Materials

PIEZORESISTIVE MATERIALS have become an important part of interactive textile systems, as they can enable fabrics to sense human input, like pressure, gestures, or motion. They are used in textiles for detecting body movements [10], posture [38] or gestures [29]. They are commonly used for soft pressure sensors [40] or soft pressure sensor matrices [9, 52, 31, 37], medical monitoring [20], performing arts [39] and interactive art installations [41]. Piezoresistive sensing is largely robust to the electrical noise introduced by the body [40], and piezoresistive materials are often malleable and flexible. This makes piezoresistive sensing the preferred method for wearable textiles, which are, by their nature, soft and conform to the shape of the body.

In this paper, we present a method of creating such piezoresistive materials, through *polymerization* of pyrrole (Figure 1a, left). The method presented allows conductive polymers to form in and around textiles, coating their individual fibers. The process is *in-situ*: polymer chains are formed in, on, and around the fabric [33], at the location where piezo-resistivity is needed.

This supports new ways of thinking about piezo-resistivity in textiles. Currently, if a sensor is to be integrated in an existing piece, the piezoresistive material must be added to the material or garment, and physically connected to conductive traces. Our method, however, preserves the original shape and the mechanical properties and haptic feel of the material or garment. Due to the in-situ nature of the polymerization process, designers need not add external components, but can instead add piezoresistive properties to the material which they are already working with (see Figure 1b and 1d). Additionally,

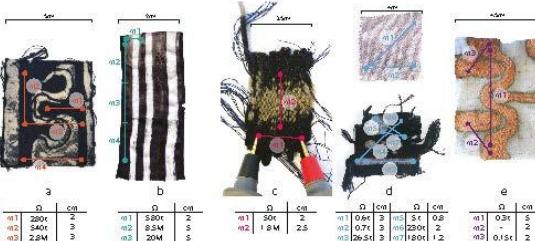


Figure 2. Measures of resistance. a) Cotton (batik), b) Cotton (tie-dyed), c) Wool (woven), d) Bamboo/Silver (polymerized using batik conductive fabric), e) Mylar/Chitosan (polymerized using batik).

Tie-Dye

The tie-dye consists of folding, twisting or applying pressure on the fabric with strings or rubber bands. The selective application of pressure determines if the fabric can absorb the dye, or in our case whether it is polymerized or not.

Tie-dye introduces an additional layer of control. Wrapping with folds allows the creation of repeating patterns and embedding objects provides the ability to add specific predefined shapes. By applying a gradient of pressure to the tied object, one can also introduce gradients of resistance into the polymerized areas.

For example, the sample shown in Figure 5b was created by wrapping fabric around a plastic tube. The white area was tied down with threads, so they are not polymerized. The blue area was wrapped around a wooden stick, so the top is covered, the middle is tied down, and the bottom is exposed. The top is highest, while it increases towards the bottom, as can be seen comparing measures m2, m3, and m4. Measure m1 shows that the tied-down areas successfully act as insulators, thus is barely any conductivity between the stripes.

Compared to traditional batik, tie-dyeing is better for larger areas, as creating large areas of resist is less laborious. However, tie-dyeing has its own issue with scale, as one needs to ensure that the pyrrole and the coagulating agent can reach all required areas. This can be a problem if the fabric is too thick or if too many layers of fabric are stacked.

Making Patterns from Yarn

Resin-based selective polymerizing need not be applied to finished textiles. Instead it can also be used for creating a yarn which is piezoresistive in selective areas. Such selectively polymerized threads can later be woven or knitted to create custom shapes and patterns.

As has been demonstrated in previous work, resistive yarn can be added to traditional weaves. However, these yarns need not be restricted to discrete rows and columns. Using a patterned resin, resistive or non-resistive areas can be created at will.

The woven sample (Figure 5c) shows that the conductance between pre-polymerized yarns that touch is strong enough to form continuous piezoresistive areas. This process, again, is borrowed from traditional textile dying techniques and is commonly referred to as ikat.

Combined with the advance of custom thread-spinning techniques⁵ which allow dynamic adjusting of thickness and material composition of a yarn, that has the potential for enabling the creation of fully customizable functional fabrics.

Using Rapid Fabrication Tools

While traditional hand-craft can provide strong results, we are also interested in creating methods which allowed for a higher level of algorithmic control. Here our best results were based around laser-cut stencils.

We explored two strategies. The first is to create a laser-cut negative and pressure fit the laser-cut pattern to the front

E.g., Studio Hilo: <https://www.studiohilo.com>



Figure 3. A laser-cut stencil (a-left) pressed against a fabric (a-right) can be used to perform selective polymerization (b).



Vue extérieure du bâtiment du Signe, centre national du graphisme à Chaumont.



Topographie Digitale

Audrey Briot audrey@datapalette.org DataPalette Paris, France	Martin De Bié martin@datapalette.org DataPalette Paris, France	Alice Giordani alice@datapalette.org DataPalette Paris, France
Leon Denise contact@shaderland.com Shaderland Paris, France	Cédric Honnet honnet@mit.edu MIT Media Lab Cambridge, MA, USA	



Figure 1: The installation: eTextile Sensing Interface (left) & Touch Visualization (right) - credit: Irene Posch / ARS Electronica.

Topographie Digitale

TEI '21, Feb 14–17, 2021, Salzburg, Austria



Figure 3: The chemical products used to functionalize our textile, Pyrrole and Iron Chloride (left). After functionalization, the textile is conductive, except where it was tied (right).

ABSTRACT

Topographie Digitale is an interactive installation that illustrates a hybridization between science and traditional textile craftsmanship. It uses electrically functionalized and pleated textiles as touch sensitive interfaces, combined with a 3D touch visualization. The dyed fabric, augmented with our custom dyes and processes, and the electronic sensing system give birth to a material with a mixed heritage that is both technological and traditional, and prefigure an emerging craft. The combination of craft and technology, which gives a creole technique, is an alternative way of thinking about the place of digitalization in our society in a more resilient way.

CCS CONCEPTS

- Applied computing → Media arts.

KEYWORDS

Interactive installation, Material Functionalization, Traditional Crafts, eTextiles, Artistic Visualization, Media Arts: E-textiles, Tangible Interaction, Digital Craftsmanship

ACM Reference Format:

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1 INTRODUCTION

Electronic textiles (eTextiles) are not only a medium but a domain to explore. The practice of this discipline reveals the complexity and the juxtaposition of different fields. The combination and hybridization of craft, science and art, give birth to research projects with a mixed heritage that is both technological and traditional. It encourages us to think to the physicality of the digital and its place in our society in a more resilient way.

Permission to make digital or hard copies of all or part of this work for personal or classroom use is granted without fee, provided that copies are not made or distributed for profit or commercial advantage and that copies bear this notice and the full citation on the first page. Copyright © 2021 Association for Computing Machinery, Inc. ISSN 2475-8359. The purpose of this practice reveals the complexity and the juxtaposition of different fields. The combination and hybridization of craft, science and art, give birth to research projects with a mixed heritage that is both technological and traditional. It encourages us to think to the physicality of the digital and its place in our society in a more resilient way.

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3.1 Textile

3.1.1 *Functionalization*. A 20 meter length of burgundy polyester fabric was carefully tie-dyed using our polymerization technique [9]. During the dyeing process the polymerization will give shape to the textile. Once the fabric is immersed in water, pyrrole and iron (FeCl_3) chloride are added. This process gives electrical properties to the textile except where the fabric has been tied: some areas will become conductive and will be insulated from one another by the undyed textile (see Fig. 3).

3.1.2 *Stretching*. The dyed and treated textiles have been pleated by the historical pleating house Maison Lognon. The selected pattern, mimicking a peacock's tail, offers a great number of possibilities of manipulation: it can be squeezed and unfolded at any point on its surface. The polymerised textiles are then compressed between two cardboard molds (see Fig. 4 and 5-bottom) and placed in a heat chamber.



Figure 4: This cardboard mold is used to create the Peacock Pattern (credit: Anne Combaz, Ateliers Lognon).

3.2 Electronic

The textile combines specific conductive areas and a passively haptic texture effect. It is pinned on a polystyrene surface, creating eflexic capacitive sensors which emerge from the surface of the artwork. An Arduino Uno is connected to the textile. Pyrrole and iron detect capacitive touch events using an MPR121 sensor board. This touch information is then sent to a Unity application, in which the projected animation is controlled.

3.3 Visualization

The Unity app listens to the Arduino and attributes each measurement zone to the animation. A configuration file allows calibrating the sensitivity of each zone to their mechanical and electrical characteristics. The animation is composed of a swarm of particles, mapped over the virtual 3D surface, which is a digital representation of the fabric landscape. The particles fly away when their zone is activated by a sensor, and come back when another zone is touched, or after some inactivity. When two zones are touched in sequence, all particles between the two are "disturbed" and create a dynamic movement on the video-projected surface. This virtual twin diffuses through several layers of dark veils that give it an impression of depth (see Fig. 5-top).

4 CONCLUSION

Topographie Digitale stands between the tangible and the virtual worlds. This artwork, taking part in electronic textile research, incarnates the meeting point of high tech and low tech, without any depreciation of either. It is a metaphor of the creative process, a creative creation process that explores possible connections between digital and textile craftsmanship. *Topographie Digitale* is a metaphor of these moving territories of creation that is constantly changing, as much as nature and human life, modifying our environment and landscape to unpredictable rhythms.

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MàJ

Design,
environnements techniques
& pratiques exploratoires



Avec Damien Batis, David Benqué,
Bastien Beyer et Skander Hachebi,
François Brument, Dominique Cunin,
DataPaulette : Martin De Bie et Audrey Briot,
Christophe Machet, Romée de la Bigne,
Marius Hamelot, Jérémie Nuel,
Roberte la Rousse, Cécile Babiolé et Anne Laforet,
Aurélien Stoky, Emile de Vischer.

Cité
du
design

Sous la direction de Grenaelle Bertrand,
Maxime Favard et David-Olivier Lartigaud

DataPaulette:
Martin De Bie,
Audrey Briot

**Le textile
électronique,
un savoir-faire créole**

Le 12 janvier 1995, est publié dans le magazine If'Wiz un article de Nicholas Negroponte et Neal Gershenfeld intitulé « Wearable Computing ». Les auteurs imaginent un futur où les technologies ont embrassé toute notre quotidien. Celles-ci prennent alors place dans les substrats textiles de nos vêtements, ou des châssis courent dans les bijoux que l'on porte. Ainsi aux plus tard, lors de la Conference sur le Wearable Computing de 1996 à Paris, les chercheurs Magalie Ortha, Rehna Post et Eric Sander publient un article intitulé « Fabric computing interfaces » dans lequel ils présentent leurs premières expérimentations mêlant textile et électronique. Ces deux écrits établissent les fondements de la pratique, alors en cours d'expérimentation, du textile électronique. La discipline s'est développée depuis, notamment grâce aux échanges et aux liens qui sont tissés entre les praticiens, formant une communauté qui partage une méthodologie propre.

On peut constater qu'aujourd'hui, l'intégration du textile électronique dans notre quotidien est au-delà de la vision portée par Nicholas Negroponte-Nelson. Il existe de nombreux praticiens en marge qui s'attachent des premières expérimentations innovantes et technologiques qui lui avaient été préparées, pour se rapprocher plutôt de la définition d'un nouveau type d'artisanat.

Cet article expose en quoi notre pratique du textile électronique peut être considérée comme un savoir-faire créole. Ainsi, nous étudierons l'instauration d'un dialogue entre pratiques

de détails sur nos méthodes de travail avec DataPaulette, consistant dans l'hybridation de pratiques variées et des outils qu'elles comprennent, allant de l'électronique à la programmation informatique, en passant par les savoir-faire textiles et la science des matériaux. Cela nous permettra de mieux comprendre la recherche opératoire par le collectif et existe consciencieusement dans deux univers, l'artistique et le scientifique. En ce sens, nous discuterons les croisements de différentes cultures qui s'opèrent lors de sa conception et la pertinence de l'emploi du concept de *croissance* dans le cadre plus large de l'artisanat hybride qu'il est le textile électronique.

La notion de *croissance* a été définie et théorisée par Édouard Glissant, écrivain et philosophe martiniquais, tout au long de sa carrière. Il la qualifie à partir de 1997 comme étant « la mise en contact de plusieurs cultures, ou, au moins, de plusieurs éléments de cultures distinctes, dans un endroit du monde, avec pour résultat une forme nouvelle, totalement imprévisible par rapport à la somme ou à la simple synthèse de ces éléments» (1997).

Dans ce contexte, il établit les fondements d'un concept qui va au-delà de l'explication de la formation des langues créoles dans les Caraïbes. Comprendre le terme de *croissance* comme un croisement attendu de cultures aux résultats inattendus, c'est

ouvrir le terme à un champ plus large, permettant de caractériser certaines formes d'innovation et de créativité. C'est cette idée dans l'esprit de briseuses de codes que nous avons dans son article « Dismantler, extraire, combiner, renommer. Comprendre l'idée et l'opération de croissance », dans lequel il explique que l'on peut considérer ces opérations de combinaison d'une autre manière, en s'appuyant sur la notion de *croissance* et sortir d'une terminologie coloniale pour rouvrir le débat sur cette notion (2017, p.130).

Techniques *high et low* a. Techniques créoles

En 2017, l'historien des techniques, David Edgerley propose le terme *technique créole* qu'il définit comme « une technique faite appartenir à un ensemble d'usages originaires en dehors du temps et du lieu où ils ont été initialement utilisées » (2017, p.49). Dans ce cadre, Edgerley circonscrit le terme technique créole à un détournement ou un remaniement de techniques originaire d'un autre territoire. Il explique que ce terme ne s'explique pas par ce qu'il est préférable d'inglobber ces deux types de technologies – *high-tech* (techniques de pointe) et *low-tech* (techniques simples, populaires, traditionnelles) – plutôt que de favoriser l'une en remplacement de l'autre, dans l'objectif de développer une compréhension des fondements matériels de l'activité humaine. Un exemple typique de cette technique créole, selon Edgerley, est la *high-tech* et les *low-tech* se retrouvent dans la pratique du textile électronique, ne serait-ce que par cette appellation conciliant deux univers diamétralement opposés, tant par leurs pratiques que par leur histoire. Pourtant, il serait faux de penser que le textile électronique n'est pas une *high-tech*. En effet, le textile n'est pas forcément *low-tech* traditionnel.

Il peut également être considéré comme *high-tech* lorsque l'on parle de textiles techniques. De même que pour l'électronique qui, selon les pratiques dans lesquelles il s'inscrit, peut faire appel à l'usage d'outils très élaborés et sophistiqués, mais aussi pas les moins rudimentaires ou les circuit imprimés du bout de la main.

D'ailleurs, les industries du textile et de l'électronique sont

respectivement les industries la plus ancienne et la plus significative dans le commerce de produits finis, ce qui témoigne de la difficulté de valoriser l'ancien détriment de l'autre (Heinzl et al., 2017).

Il existe donc une nécessité de faire évoluer la pratique du textile électronique.

b. High-low-tech

Si l'on souhaite parler de la relation entre techniques *high et low*, on se doit de parler du formidable travail mené de 2009 à 2012 par les chercheurs de l'Institut de l'Aviation civile, en particulier par Leah Busque au MIT Media Lab. Pour ces chercheurs, les notions de *high* et *low* font appel respectivement à des procédés technologiques innovants et savoir-faire traditionnels dont ils expérimentent entre les croisements. Les membres du MIT Media Lab ont alors mis en place une plateforme de test de ces techniques en prenant à plusieurs reprises, les richesses qui peuvent en résulter. Par le biais, leur ambition était de démontrer si l'accès à la technologie et/ou la possibilité d'en repenser les paradigmes. Ils ont notamment créé des kits d'apprentissage aux rudiments de l'électronique, offrant aux utilisateurs l'opportunité de déterminer eux-mêmes la conception, l'esthétique et l'utilisation qu'ils feront des objets technologiques.¹ La traduction d'une

DATAPAULETTE : MARTIN DE BIE ET AUDREY BRIOT

