

**IMPROVISED
EVERYTHING**

IMPROVISED EVERYTHING

PROTOTYPING
A MORE EQUAL
PARTICIPATION
IN DESIGN

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CONTENTS

IMPROVISED EVERYTHING	1
SOME PROBLEMS FOR DESIGN	3
THE ROLE OF PRACTICE	4
SPECULATIVE TOOLKIT	5
ROLE PLAYING: DIY DESIGNER	6
THINKING ABOUT MATERIALS	8
INSTRUCTIONS: SKETCHES	21
RESEARCH TRIP: THE ALLOTMENT	26
WORKSHOP A: PILOT	29
SPECULATIVE TOOLKIT: IN USE	30
SELF-MADE TOOLS: PUT TO USE	40
WORKSHOP A: WHAT WAS MADE	47
REFLECTING ON THE PILOT WORKSHOP	48
A MASTERLESS APPRENTICESHIP?	49
WORKSHOP B: NON-DESIGNERS	51
BUILDING ON THE EXISTING TOOLS	
AND OBJECTS	52
SELF-MADE TOOLS: PUT TO USE	72
REFLECTING ON THE PILOT WORKSHOP	85
WORKSHOP B: WHAT WAS MADE	86
REFLECTING ON WORKSHOP B	87
TOWARDS A MORE EQUAL PARTICIPATION?	88

IMPROVISED EVERYTHING

...is a practice-based research project which aims to reimagine public participation in design. The project concerns the agency of the “user” in relation to their material surroundings: a space populated by the professionally-designed products of everyday life. It’s also about how they might learn to see these products differently. *How might untrained people begin to act as designers and makers, and take more control of the materiality of their everyday lives?* Through the making of speculative objects and a series of workshops, the project investigates the premise that through improvising tools and products from waste materials, untrained people might become more confident in their abilities to design and make things, and in their own resourcefulness. The project is centred around the production of an improvised toolkit that aims to embody a means of self-education - a “masterless apprenticeship” in everyday designing and making, consisting of the toolkit’s creative replication. The project engages with the history of designers’ future visions for a better society - to make up for the one produced by the normative practices of design. This is one way of putting such “utopian” ideas to the test: not as totalising impositions, but experimentally, at the smallest and most immediate scale - in design, making, education, and everyday life.

VISIT TO A WORKSHOP

*Hammering and laughter rang through the doorway.
Inside, everything was in pieces.*

*"Are you repairing... making sculptures...?" he asked,
puzzled, "...are you a designer too?"*

*She stopped hammering -
"We're all designers, I suppose..."*

*Everyone was making strange, beautiful things.
He felt redundant; the workshop was as big as the world.*

*It remains
in his dreams.*

SOME PROBLEMS FOR DESIGN

MAKING

There is a contemporary resurgence of interest in “making”, such as “hacking” and the “maker movement”; these can be seen as attempts to widen participation in designing and making, and challenge the alienation of the consumer of mass produced products. The rhetoric of the “third industrial revolution” of distributed digital manufacture however also seems to promise accelerated consumption, and further deskilling.

UTOPIA

The “utopian” imagination of a better way of living has an affinity with design: design can imagine and put into practice what is “not yet”. Historically, politically-engaged designers such as William Morris have imagined futures of unalienated, creative work for all; an ethical art learned together. The imposed, totalising designs of modernity have devalued utopia; but without it, we are left with no way to imagine anything better.

EQUALITY

Designers hold a position of power over their “users”. Participatory design promises a more equal relation, but the designer remains in control of the terms of engagement. Jacques Ranciere has proposed that in education, as in democracy, a principle of equality must first be *assumed* -and so enacted - in order for such changes to occur. This project takes Ranciere’s seemingly utopian equality as a point of departure, in a practical investigation of the possibility of a more equal participation in design - through making, and self-education.

THE ROLE OF PRACTICE

OBJECTS

create

INTERACTIONS

which produce

MORE OBJECTS

which all serve as

EXPERIMENTAL DATA

for analysis and

REFLECTION

SPECULATIVE TOOLKIT

ROLE OF OBJECTS IN RESEARCH

The initial speculative objects were produced as a form of material self-experimentation. Found materials and waste consumer objects were turned into improvised tools, using DIY facilities in order to anticipate the working constraints of a non-professional designer.

Purpose: to imagine the tools of an intentional everyday design and test them out materially, and provide communicative objects with which to engage workshop participants.

ROLE PLAYING: DIY DESIGNER

CONDITIONS OF PRODUCTION

The initial toolkit was made at home, using un-powered DIY tools and a folding workbench. As the rented flat in which I live has no outside space to house that traditional domain of DIY, the shed, the loft became a temporary substitute in which to play the role of the DIY designer. Working within the physical, material and economic contraints of my own domestic environment, these restricted conditions of production allowed me to experience something of the constraints of the non-professional maker, working under less than ideal conditions with a restricted set of tools.



THINKING ABOUT MATERIALS

FOUND MATERIALS

The toolkit should be made of cheap or free, readily available materials: if an untrained person is to replicate the toolkit, the materials should be familiar and easy to find, and any cost kept to a minimum.

The everyday nature of the materials used in the toolkit should help to communicate the idea that the material world around the user is not a fait accompli, but *can* be changed.

STONES

One of the earliest materials with which humans made tools is stone. I experimented with the techniques of flint knapping, trying to make cutting edges from flint pebbles found on the beach.

I was able to produce a number of sharp fragments which could potentially be used as cutting edges, but it was fairly difficult to control their shape. The skill would take too long to develop.



BROKEN FURNITURE

A broken piece of furniture is a manufactured commodity that has lost its economic and use-value. It has become waste. It can also however be thought of as material - the mass-produced equivalent of the stones on the beach.

Mass produced objects are often assemblies, and can be broken down into materials and components to be reused in new ways.

The reuse of waste presents a challenge to the design of products - it reclaims the materials and objects beyond the designer's original intentions.





Left: Hammer
Materials: stone, stick and twine

Below: Screwdriver
Materials: butter knife, chair leg





Left: Mallet
Materials: parts of chair and bed frames

Below: Saw
Materials: butter knife





Left: Drill bit
Materials: spoon

THE UTILITY OF FAILED EXPERIMENTS

The tools produced vary in their utility: some are acceptable substitutes for their mass-produced counterparts, and others could be classed as failed experiments. These perhaps operate more successfully on the level of communication - of the idea that the world of everyday objects could be changed, in simple ways, to suit new and more self-determined ends, limited only by the resourcefulness of the “user”.





Left: Wire saw - coarse
Materials: coat hanger, keyrings

Above: Wire saw - fine
Materials: piano wire, split rings, pencils

- Right: Frame saw
Materials: chair frame, sticks, twine, nails, hacksaw blade
- Below: Frame saw dismantled
- Over: Frame saw detail







INSTRUCTIONS: SKETCHES

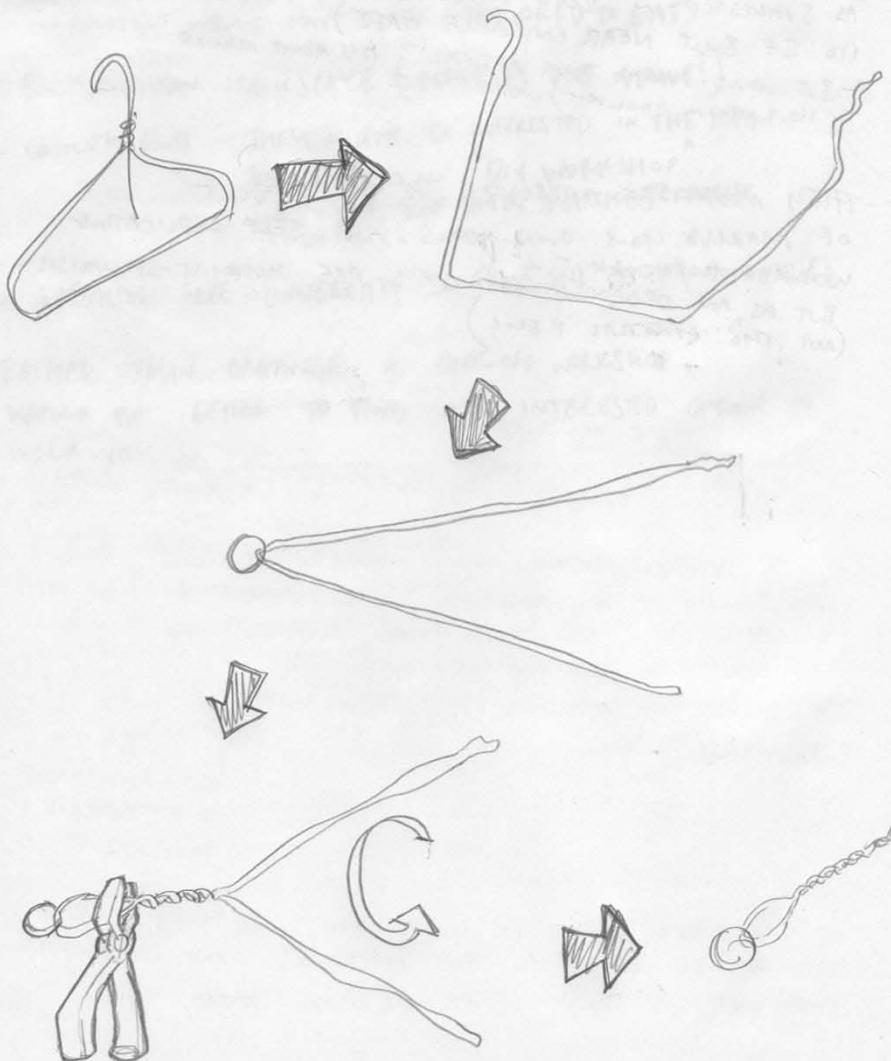
ROLE OF INSTRUCTIONS IN RESEARCH

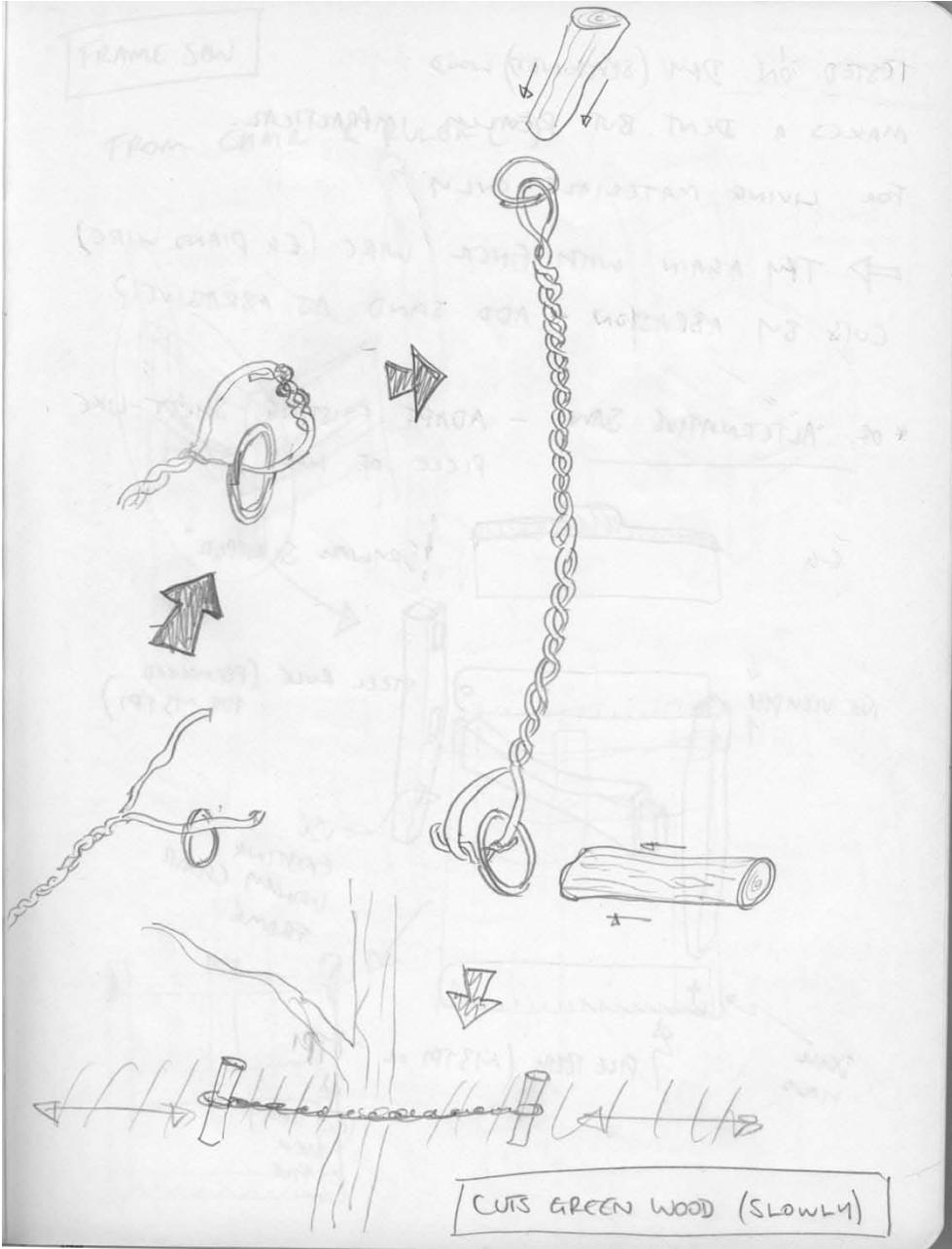
The instruction sketches were made as a way of documenting and analysing the making process, with the idea that they might be used to explain the process to others, and so disseminate the means with which to replicate the tools.

Instructions can appear as a prescriptive means of communication, if the attitude in which they are read is one of deference. The intention was to refine these into “incomplete” or interpretable instructions to set the task of replicating the tools to the workshop participants, and serve as a means to elicit improvised design activity from them.

WIRE SAW

7.4.15





Above and left: Instruction sketch for coathanger wire saw
(Visual and linear approach)

10.4.15

WALNUT

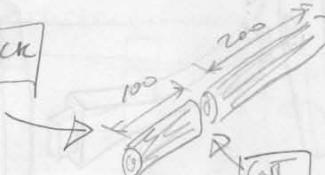
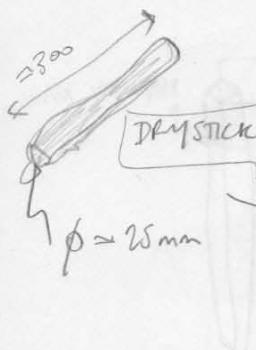
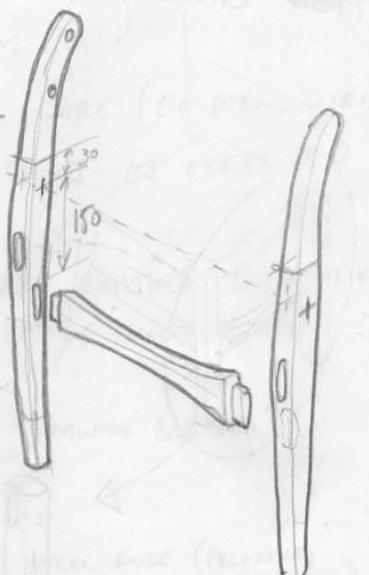
FRAME SAW

w/ 300mm HACKSAW BLADES.



DISMANTLE

D



CUT

PARE W/ CHISEL



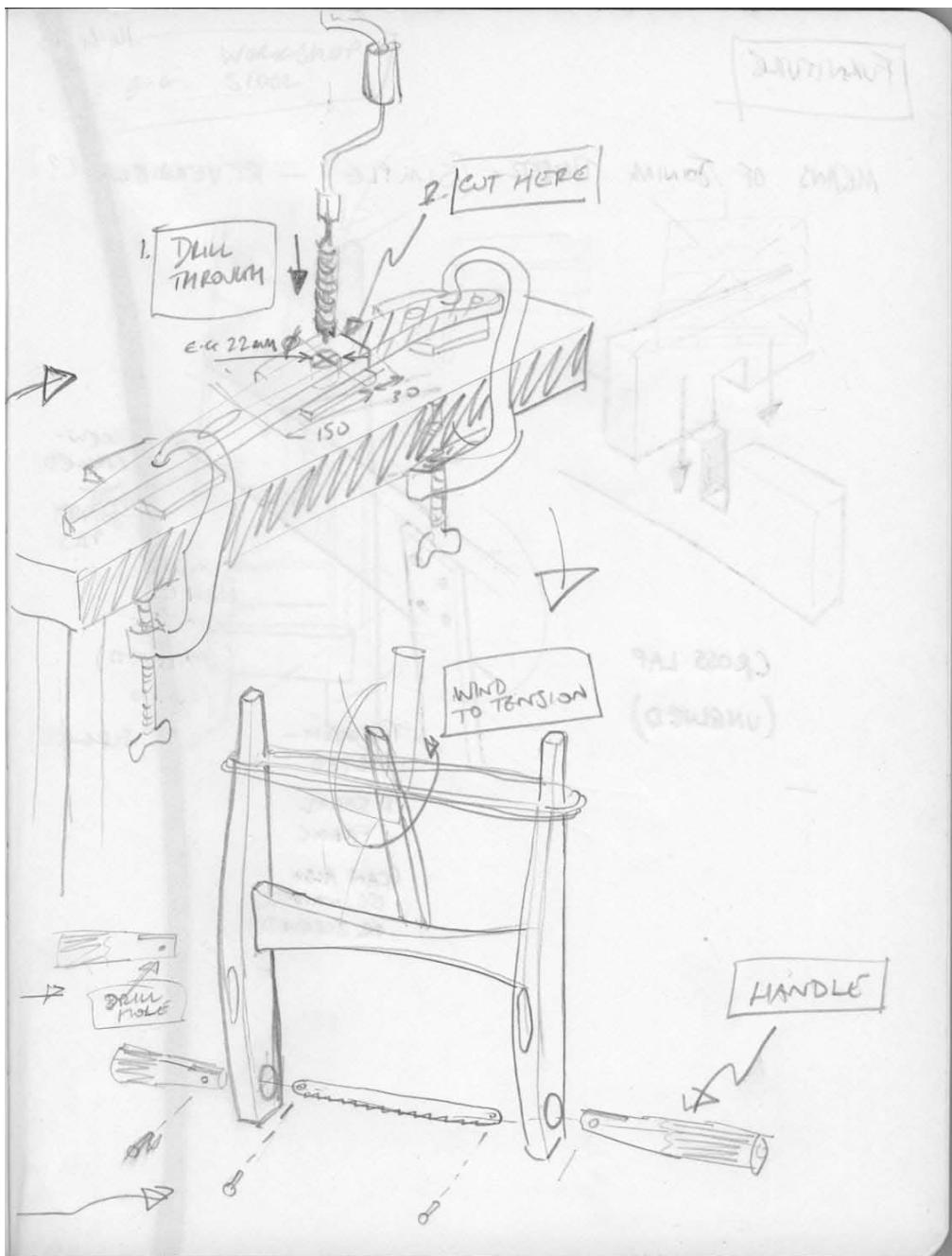
CUT SLOT IN BOTH

ROUND
2x NAIL (25x30mm)



WT OFF





Above and left: Instruction sketch for chair frame saw (becoming less linear)

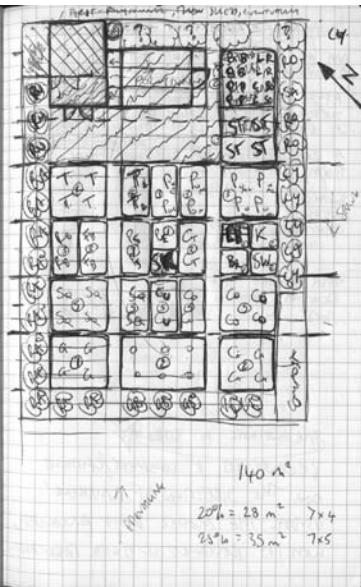
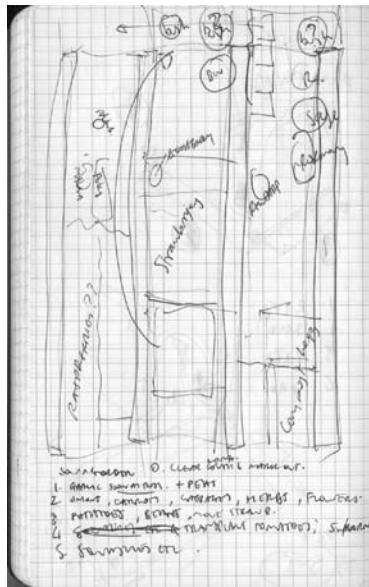
RESEARCH TRIP: THE ALLOTMENT

THE ALLOTMENT AND DESIGN

In the spring I took on a plot at the mouslecoomb estate allotments. The allotment is a holdover from ancient common rights - an uncommodified space for providing your own sustenance.

Planning and working the allotment brings to mind Herbert Simon's definition of design: a practice of changing existing states into a preferred ones.

Below: Documenting and planning the plot



AN ENVIRONMENT OF CREATIVE RE-USE AND IMPROVISATION

The allotment is the habitat of the bicolour - the creative improviser with the materials to hand. Many of the allotment sheds and greenhouses are self-built, by untrained people, and often from scavenged materials.

The sheds show the ability of the untrained to design and make things when necessary, and continually adapt them. Some are however quite ramshackle. They raise the question: what might the shed builder need (to learn?) to design and make more effectively?

Above right:

Shed with self-built greenhouse attached

Right:

Self-built sheds,
made from
floorboards
and doors



IMPROVISED EVERYTHING

MAKE YOUR OWN TOOLS
MAKE IMPROVISED FURNITURE

Pilot workshop: 1-5pm, Wed 6th May
Dorset place studio-workshop



NO EXPERIENCE
REQUIRED

email to sign up:
n.sloane@brighton.ac.uk

WORKSHOP A: PILOT

The pilot workshop was intended to investigate how a group of art and design students of varying levels of experience approached a designing and making exercise – that of making their own simple hand tools from found/waste materials, and using them to make other tools and and/or furniture towards an “improvised workshop”.

This workshop also aimed to help to get an idea of what skills and behaviours might need to be developed in non-designers, if they are to be encouraged to become designers and makers in their daily lives.

This pilot served as a trial run before a further workshop with non-designers. The overall aims of these workshops are to better understand the capabilities of people to creatively “design” improvisatory solutions to problems in everyday settings, using everyday materials and simple tools – and to what extent they are capable of “teaching themselves”, or each other, how to solve the problem, or to design and make things.

The original tools and instructions acted as catalysts for communication of the idea, and for the production of further tools and furniture, which then act as data for analysis. To a degree they also served as instructions for their own making, via their disassembly and reassembly.

Left: Flyer for workshop A (pilot)

SPECULATIVE TOOLKIT: IN USE

PILOT WORKSHOP PART 1:

TOOLS AS COMMUNICATIVE OBJECTS

Participants were shown the original tools, including the failures, in order to communicate the idea of the project and the workshop.

TOOLS AS INSTRUCTIONS

The participants were then split into two groups (based on level of experience), and given one of the tools to replicate. The only instruction they were given was to “take the tools apart and write your own instructions for how to make them”. To what extent could the tools act as the instructions for their own replication? Could the participants teach themselves how to make the tools?







LESS EXPERIENCED DESIGNERS

Group 1: Chloe, Chris (Jun),
Lauren, Saki

Tool: Stone hammer

Taking the tools apart

Writing their own instructions

Choosing materials

Making their own improvised
replications

Using the original tools





MORE EXPERIENCED DESIGNERS

Group 2: Cat, Ella, Evan, Leona

Tool: Frame saw

Taking the tools apart

Writing their own instructions

Choosing materials

Making their own improvised
replications

Using the original tools





Above:

Both groups
having fun making
their own tools

Right,
above right:

Group 1 working
on their impro-
vised replications

Far right:

Testing out a new
stone hammer







Left, below left,
below:



Group 2 making
their own impro-
vised replications

Above right:

Leona admiring
her improvised
design

Below right:

Ella testing out a
replica frame saw





SELF-MADE TOOLS: PUT TO USE

PILOT WORKSHOP PART 2:

DIRECTLY DESIGNING BY
IMPROVISED PROTOTYPING

MAKING THE IMPROVISED
WORKSHOP

The tools they had made were shared out between the groups. They were given the instruction: “use the tools you have made to make more tools or furniture towards an improvised workshop”. How would they improvise their own designs? How would they use the tools and materials available?



Group 1:
A storage unit for
improvised tools
(OSB, sticks, ply)

Below left:
The unit beginning
to take shape

Right:
Working together

Below:
The finished unit





Group 2 divided in two as the workshop progressed.

Group 2A -
Ella and Evan:
An improvised vice,
“for holding things”
(scrap timber, sticks,
threaded rod)

Left:
Evan cutting down
threaded rod

Below:
Ella assembling
the vice





Above left:
Setting up
the vice



Left:
Evan demonstrat-
ing the finished
vice by clamping
a piece of scrap
to be cut



Group 2B - Cat and Leona:
An improvised drawing board
“that you could use outdoors”.
(Chipboard, bed slats, sticks,
chair frame offcuts)

Left, below left:
Using the improvised tools to
make new components

Below, bottom:
Assembling the drawing board

Right, below right:
The finished drawing board

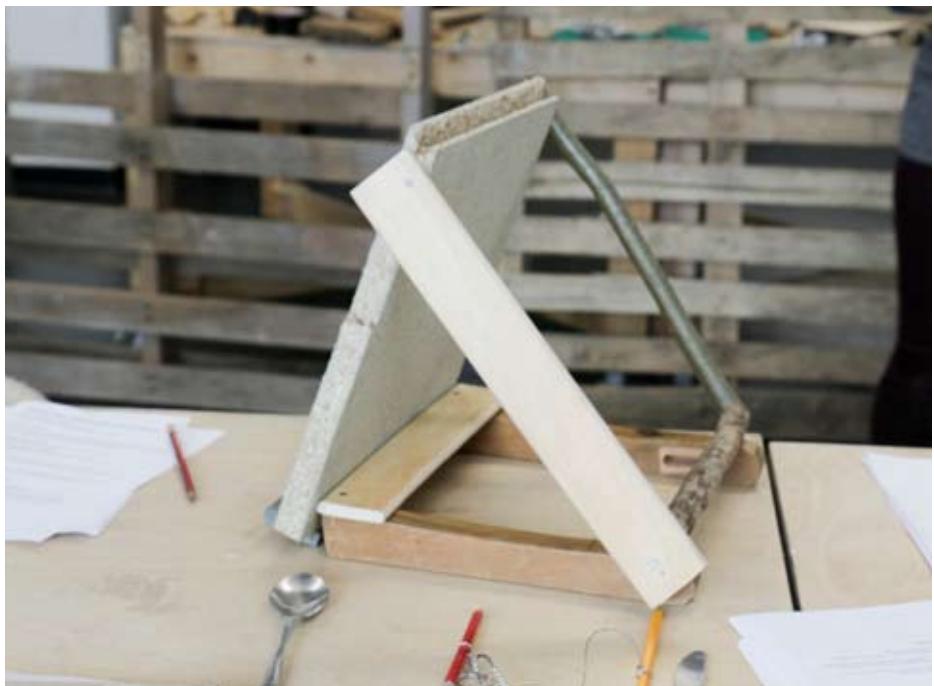


Leona:

[to Cat, laughing]

*It's like, the **worst**
job I've ever seen!*







WORKSHOP A: WHAT WAS MADE

GROUP 1:

STONE HAMMERS (4)

Two were successful, the other two were flawed - the stones were too loose.

STORAGE UNIT FOR IMPROVISED TOOLS

Free-standing; holds one frame saw and two hammers, with two shelves for further items.

Above left:

Some of the participants' self-designed objects towards an improvised workshop

Left:

Participants enjoying seeing what the others had designed and made

GROUP 2:

FRAME SAWS (3)

Two were successful; a large one similar to the original, and a smaller green one, which avoided the need for pegs, fitted with a metal-cutting blade. The third was flawed - an A-frame design, it couldn't be tightened enough to tension the blade.

WORKSHOP VICE

Based on the woodworking vices in the workshop, the design successfully adapted to suit the scavenged materials; uses a spanner to tighten.

DRAWING BOARD

Uses nails as pin-joints, allowing the board to be collapsed flat. Not quite finished - the board should be attached to the base e.g. "with a hinge".

REFLECTING ON THE PILOT WORKSHOP

HOW DID IT GO?

The participants were all art and design students, but with experience ranging from international foundation to 2nd year BA design and craft.

The participants all really enjoyed the workshop - particularly making their own tools, and working together.

They worked intuitively, largely by eye, with some measurement done, including by comparison - e.g with sticks.

WHAT DID I LEARN?

They were able to replicate the tools quite successfully, without explanation: they were able to effectively teach themselves collectively.

They took the “spirit” of the original tools and applied it to what they designed and made for themselves.

The time and material constraints seemed to work as a motivating factor, along with working in groups - “a very free and creative process”.

The design students enjoyed the freedom of making “badly”, and for themselves/each other.

At some points I found it difficult to hold back from advising - e.g. when I noticed a saw being used the wrong way round.

A MASTERLESS APPRENTICESHIP?

SELF TEACHING THROUGH OBJECT AND DIALOGUE

In the pilot workshop, a form of self-teaching seemed to emerge from within the group dynamic. The participants engaged in a dialogue between themselves and the objects, and from this came the knowledge of how to replicate and adapt them.

DESIGNERS ALREADY?

The pilot workshop seems to indicate that there is a value in this approach; the participants were however all art and design students, and so had already committed to the idea that they were, or are going to be, designers. In order to test the wider applicability of the idea and method, the workshop needs to be repeated with untrained people, who do not already see themselves as designers.

A DIFFERENT PERSPECTIVE?

A different result seems to have emerged among the more experienced participants - a questioning of the ways in which they are accustomed to working, and the impulse to produce polished, "finished" objects. Perhaps there is a wider value for designers to be found in the free and improvisatory "bricolage" of the untrained designer and maker.

IMPROVISED EVERYTHING

PUBLIC WORKSHOP: 1-5pm, Wed 24th June
University of Brighton

NON-DESIGNERS:

MAKE YOUR OWN IMPROVISED TOOLS
THEN PUT THEM TO USE



NO
EXPERIENCE
REQUIRED

email to sign up
or for further info:
n.sloane@brighton.ac.uk

Places are limited - please email to
reserve a place, indicating any previous
experience of designing/making things

UBIC studio-workshop
University of Brighton
6 Dorset Place
Brighton BN2 1ST

This workshop is open to
adults who are not design
students or professional
designers/craftspeople

WORKSHOP B: NON-DESIGNERS

The second workshop was intended to investigate how a group of non-designers approached the same designing and making exercise. The workshop was open to the public, but participants were recruited through the university; this resulted in a group consisting of a lecturer (fine art), a recent graduate (moving image), a PhD student (design history), and a lecturer from another university (craft history).

This workshop also aimed to provide a comparison with the results of the first - to see to what extent non-designers could act like the novice designers, and teach themselves how to design and make their own tools, and if they found any aspects of the process difficult.

As before, the original tools and instructions acted as catalysts for communication of the idea, and for the production of further tools and furniture, which then act as data for analysis. To a degree they also served as instructions for their own making, via their disassembly and reassembly.

The tools produced in workshop A were made available to this workshop, making this a second iteration of the workshop cycle, further towards an “improvised workshop” - more of the tools available were “improvised”, ready to be put to use or used as inspiration.

Left: Flyer for workshop B (non-designers)

BUILDING ON THE EXISTING TOOLS AND OBJECTS

WORKSHOP B PART 1:

TOOLS AS COMMUNICATIVE OBJECTS

Participants were shown the original tools, including the failures, as well as the tools and objects produced in workshop A, in order to communicate the idea of the project and the workshop.

TOOLS AS INSTRUCTIONS

The participants were again split into two groups, and given one of the same tools to replicate. The only instruction they were given was to “take the tools apart and write your own instructions for how to make them”. To what extent could the tools act as the instructions for their own replication? Could these non-designers teach themselves how to make the tools? To what extent did the novice designers’ prior knowledge/experience prove important?





GROUP 1:

Mary-Anne, Julia

Tool: Frame saw

Left, below left,
below:

Choosing
materials

Using the existing
improvised tools



Making their own
improvised
replication

Right:
Improvising with
tools

Below right:
Trying to work
out how the saw
frame will react
under tension

Over:

Taking the tools
apart and writing
their own instruc-
tions







A change of plan:

Prompted by a misunderstanding of how the frame responds to the string tension, they decide that the sides should be straighter.

Right:
Drilling; testing
crossbar for fit



Anti-clockwise
from top:

Dismantling the
existing frame

Mary Anne cut-
ting threaded rod

Joint effort:
cutting together

A new crossbar





Anti-clockwise
from top:

Cutting sticks
for pegs

Division of labour:
Julia assembling
frame and string

Julia paring pegs





Above left:

Original saw partly reassembled

Left:

Measuring by comparison with the original

Below left:

Intervening to ask how they think the frame will tension the saw blade



NS:

I've noticed a slight problem with this design...

[demonstrates how bars would move when string is tensioned]

EXTRA TIME

Both groups were given extra time to complete the first task, as group 1 needed longer to further adapt their design after they realised the modified pegs they had made would not work the way they had made them.





Far left:

Discussing how
to adapt the pegs

Below far left:

Assembling the
saw, fitting blade

Left:

Hammering pins
into pegs to stop
them coming out
when tensioned

Below:

Working together;
determined effort





Above:
Success!

Left:
Setting up test

Above right:
Enjoying testing -
it works really well

*MA: It's amazing
because we had
a really difficult
time putting it
together.*

*Right:
J: That's so cool
- we made a saw!
MA: ...I've never
done that before!*





GROUP 2:

Stephen,
Kimberly

Tool:

Stone hammer



Above:

Taking the tool
apart and writing
their own
instructions



Left, below left:

Working on the
instructions and
using the existing
improvised tools



Above right:

Thinking about
the tools and
processes

Right:

Updating the
instructions -
trying to describe
everything in
words making it
more difficult



Right:

Trying out the
improvised vice

Below:

Collaborating closely,
working out how to
split the stick





Left:

Splitting the stick

Below:

Working together
to tie in the stone





Above:

First attempt;
the stone was
a bit loose

Above right:

Trying out an
idea to make the
wood bend more
easily



Above:

Second iteration -
splitting a stick
held horizontally
in the vice

Right:

Tying the stone in





Left:

A joint effort, and
a modified design
based on a new
way of making it

Below:

Proud of
their creation



K: I think we're done!



Clockwise from
above:

3rd attempt;
Stephen trying
out another idea
alone, as an
experiment

Coming back to-
gether to discuss

Tying in the stone

Working together;
cutting off the top
end of the stick





Left:

S: [taps new hammer on bench] I think it's alright... because what happens is, it kind of [bends] out and tenses it.

Below left:

[MA comes to find hammer]



K: Do you want to borrow our new hammer?

MA: This is the true test isn't it? I'm honoured... It's quite an object!

K: [to S] I'm so pleased they're using our tool!

SELF-MADE TOOLS: PUT TO USE

WORKSHOP B PART 2:

DIRECTLY DESIGNING BY IMPROVISED PROTOTYPING

MAKING THE IMPROVISED WORKSHOP

Because of the short amount of time left and smaller number of participants, the groups joined together for the second task. They were given the instruction: "use the tools you have made to make more tools or furniture towards an improvised workshop". How would they improvise their own designs? How would they use the tools and materials available?

Below: Trying to decide what to make by discussion; miming with objects; drawing.

[Various suggestions/names: ... "pliers" ... "a gripping tool" ... "a grippy thing" ... "a pincer" ...]

K: Maybe we can make the tool that pulls out nails...?





DANGEROUS IDEAS?

Above left:

Trying to work out how to bend the knife; using the stone hammer



Left:

Trying another method - a wooden block; Stephen then gave up and used his bare hands as Kimberly looked on, cringing

Below left:

Mary Anne brings boiling water; she thought this might soften the metal to help with bending it... could have been dangerous





Right:

Stephen sawing

Below right:

Kimberly filing

Above:

Stephen and Kimberly seemed to take charge of the design, working on the main part of the tool; cutting the bent knife down with an improvised saw

Right:

Discussing Mary Anne's idea for a stone handle

Below right:

Comparing their tool with a claw hammer







Left: Stephen filing a notch

Left: Kimberly filing the end flat

Below: Kimberly filing the end of the tool as the others look on



MAKING A HANDLE

Julia takes on the task of making the tool's handle out of a wooden spindle from an old bed frame

Right:

Stephen advising/
directing Julia

Below:

Enjoying trying to use
the improvised vice





Above:

Resorting to the workshop vice; cutting a handle using the self-made saw

Above right:

Julia discussed handle with Stephen and Kimberly; comparing design/construction with the original improvised screwdriver

Right:

Drilling out the handle following Stephen's suggestions





Top left: Stephen trying to assemble the handle and tool

Top right: The handle breaks

Above: A change of approach - Kimberly winds twine around the tool to make a handle



WORKING SEPARATELY

Mary Anne has been mainly working on her own since the initial discussions

Above:

Making a test-piece for the nail puller

Top right:

Using the new stone hammer

Above right:

Testing the nail puller in progress

Right:

Working on something new; using the improvised vice and self-made saw





TESTING

Above:

Stephen testing out the nail-pulling tool

Right:

Improvising a technique;
removing a second nail
by “yanking” it





MARY ANNE'S TOOL

Above:

Mary Anne discussing her tool with the group

Left:

The “scraper” tool, made from a stick and the offcut from the knife used to make the new nail-pulling tool



MA: *I was just intrigued with making something from the offcuts. It just occurred to me that this is potentially useful as a blade [...] why not use it as a sort of gouging tool? [...] I quite like it, it's a... sort of animal...*





WORKSHOP B: WHAT WAS MADE

GROUP 1:

STONE HAMMERS (2)

Two were successful, made to different designs based on the original hammer, though there were some other experiments towards them made along the way.

GROUP 1 & 2:

NAIL PULLER

The combined groups devised and produced an original working design in approx. half an hour - a nail puller, made from a butter knife and twine, based in part on the claw of a hammer. This responded to a need arising in the course of the workshop.

Over:

Tools produced in workshop B (Clockwise from top left)

2nd stone hammer (S & K)

1st stone hammer (S & K)

Frame saw (MA & J)

“Scraper” (MA)

Nail-puller (S, K, MA, J)

GROUP 2:

FRAME SAW

Along the same lines as the original, though a misunderstanding about the effect of having angled sides led them to modify the design, bringing in new materials (threaded bar), and reversing the orientation of the pegs to hold the saw blade. Reversing the pegs necessitated another adaptation - further pins in them - to stop them coming out when the saw was tensioned.

Misreading the original made the group's job harder, as they had to then design creative solutions to the difficulties arising from their modifications - but they certainly designed in order to overcome them.

“SCRAPER”

Mary Anne made a “scraper” tool for primarily aesthetic purposes, as a way to use the offcut produced while making the nail-puller in the second part of the workshop.

REFLECTING ON WORKSHOP B

HOW DID IT GO?

The participants were all non-designers, although each had some links to either some form of creative practice or historical/critical study related to art and design.

The participants generally really enjoyed the workshop, except for one who “found it more interesting/fascinating than enjoyable”. The participants particularly noted their enjoyment of working out how to make their own tools, discovering that they worked, and collaborating with others.

They worked somewhat intuitively, largely by eye, in a similar way to the designers in workshop A. The results were not of a noticeably different standard to those of the design students.

WHAT DID I LEARN?

They were able to replicate the tools quite successfully, without explanation: they were able to effectively teach each other through dialogue.

They took the “spirit” of the original tools and applied it to what they designed and made for themselves.

The time and material constraints seemed to work as a motivating factor, although for some it made the process more stressful. If the workshop is repeated in future, giving the participants longer in which to design and make would be beneficial.

The non-designers enjoyed the process of making, and showed a strong attachment to the objects produced.

Again, at some points I found it difficult to hold back from intervening, but attempted to transmit no knowledge in the interventions. Intervening to ensure safety seems necessary; remaining ignorant here would be a problem.

TOWARDS A MORE EQUAL PARTICIPATION?

SUCCESSES OF THE TOOLS AND WORKSHOPS

The tools, despite their obvious “flaws”, and the workshop format acted as the catalyst for a form of self-teaching to emerge - through an object-centred dialogue. They provoked in some of the non-designers the realisation that they *could* act in a meaningful way on the everyday material world of use around them, by designing and making useful things.

IMPROVISATION AND EXPERTISE

When analysis failed, they proceeded by conjecture and improvisation. While in part this resulted in the need for more designing, they demonstrated their ability to improvise, and so their resourcefulness. Improvisation is thought of as occurring at a certain level of expertise, after overcoming the rigid rules given to the beginner - but without instruction, they improvised from the start, showing an *everyday* expertise.

ADDRESSING THE GAP FROM BOTH SIDES

The results offer a partial confirmation that such an approach can provoke realisations on a deeper level, on the part of both designers and non-designers, which could potentially start to address the ill-effects of the unequal way in which design is constructed as a practice and a discipline. Both designers and non-designers can have an effect - if they assume equality, and so enact it, in their engagements with the material.

PROTOTYPING A MORE EQUAL PARTICIPATION IN DESIGN

NIALL SLOANE