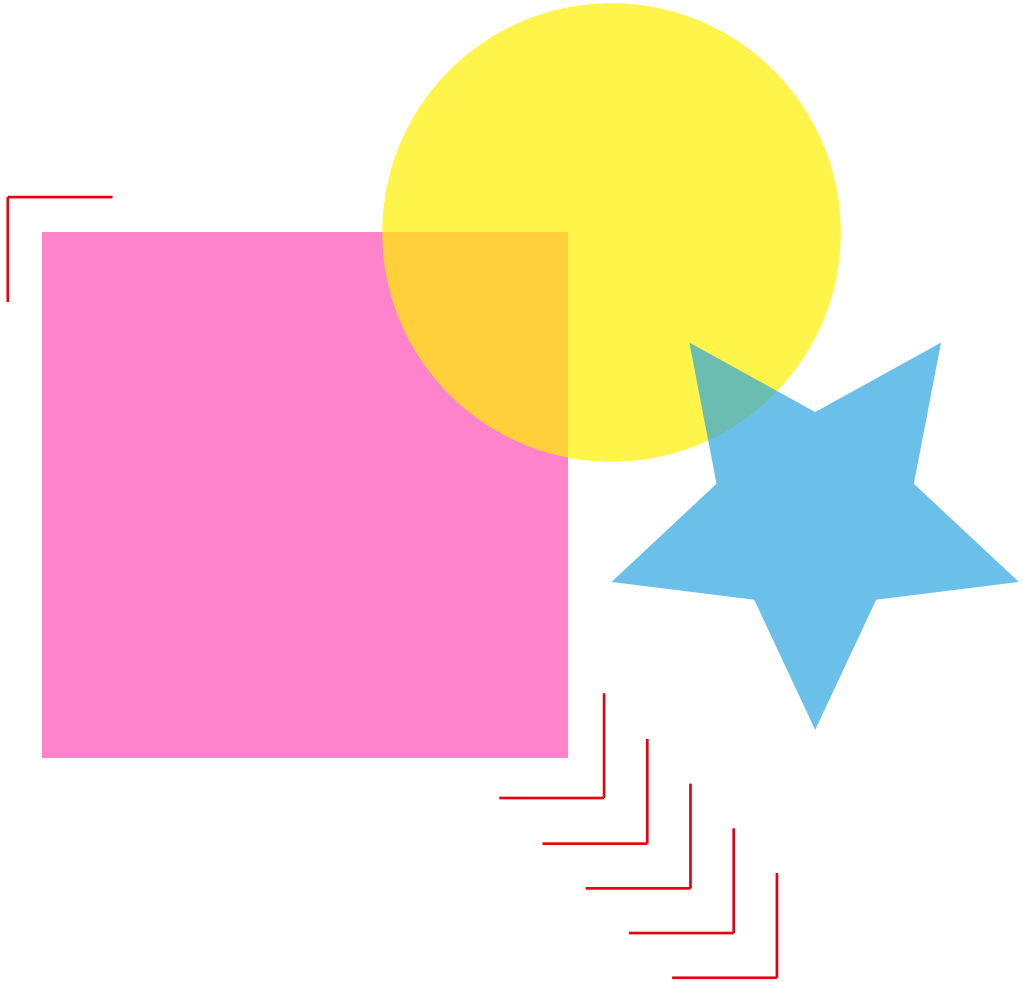


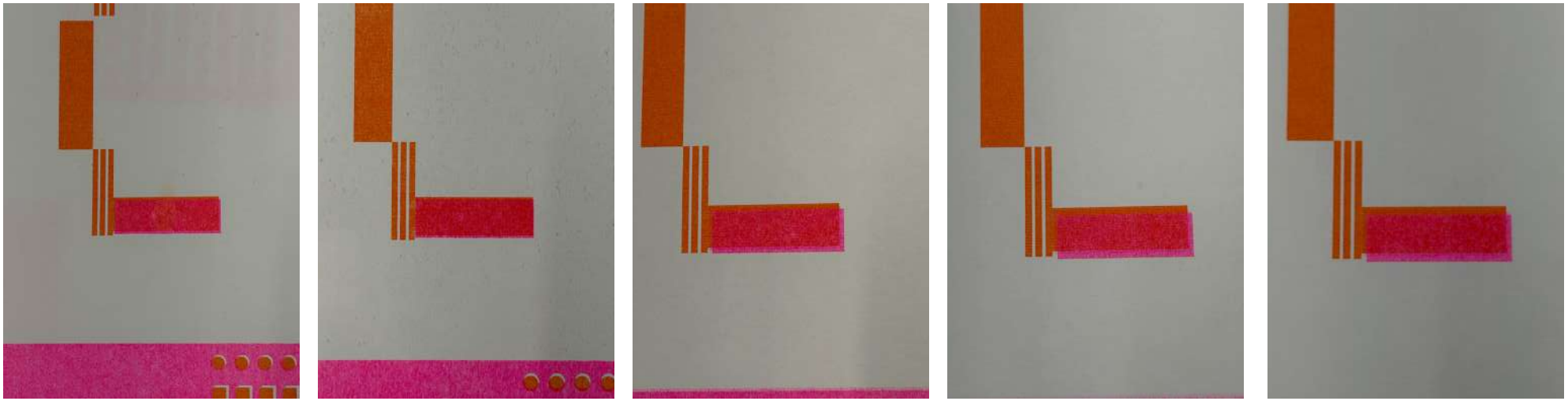
Brief 4—Methods of Iterating

Starting Point — Copy & Failure

I began by copying a Risograph print which is from Howful Studio.
Instead of consistency, I encountered instability.



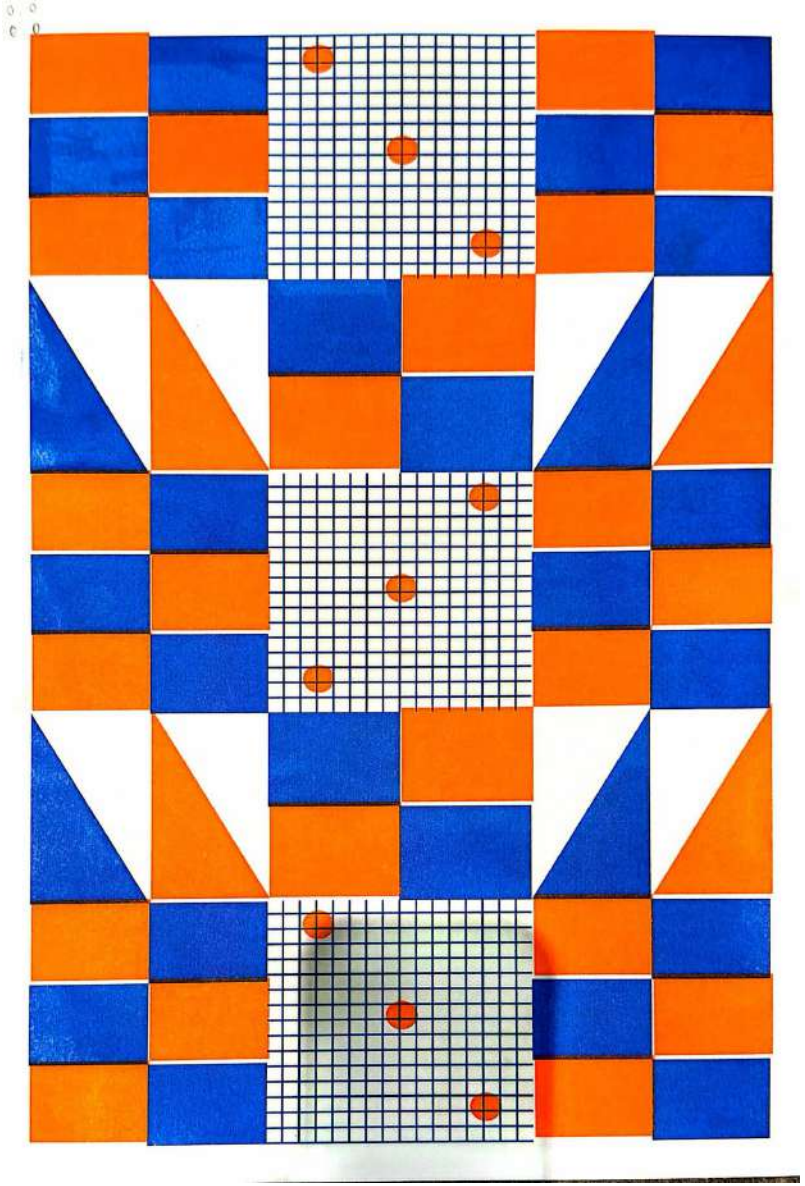
Every time the position was different.



The Turning Point — Calibration Fails

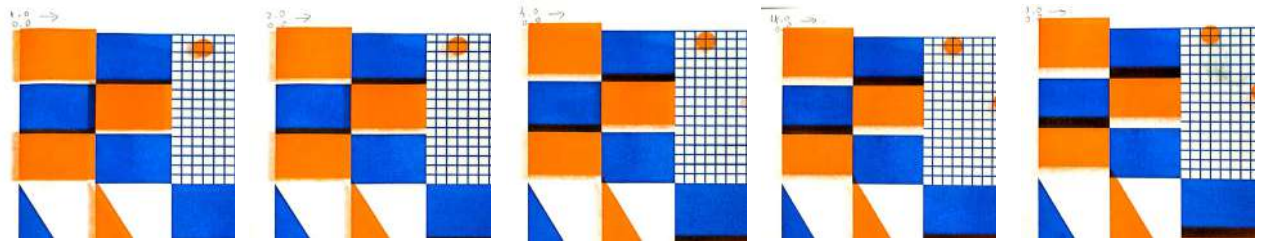
Calibration did not reduce deviation. It intensified it.

Original（without calibration）

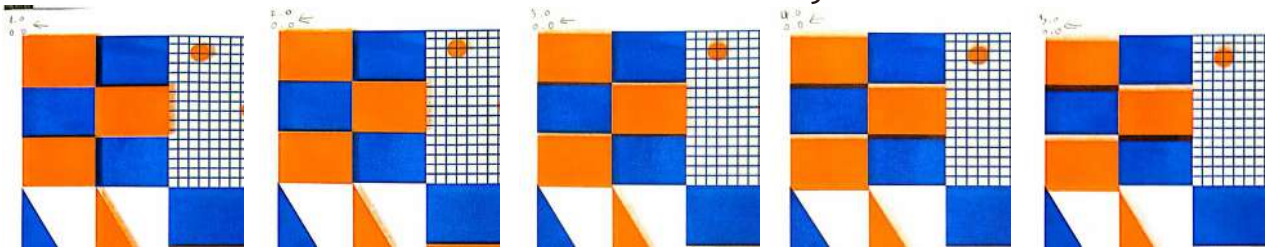


Only change the color of orange （unit： mm）

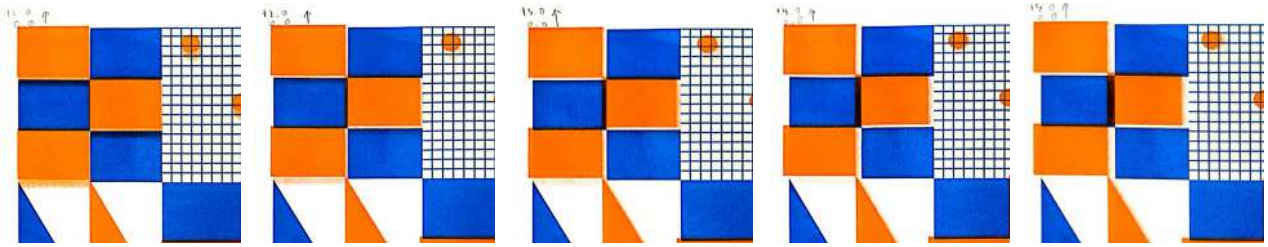
Adjust to right but move up



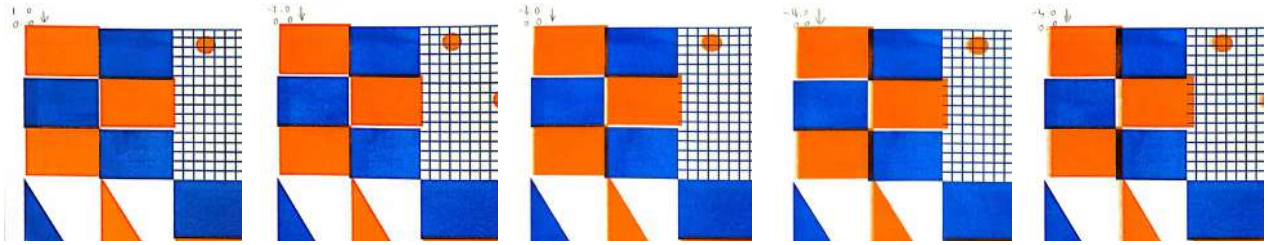
Adjust to left but move down



Adjust to up but move to left



Adjust down but move to right



Control is mediated through mechanical translation.

The Key Discovery — Directional Translation

The interface direction does not match the printed outcome. Control is translated.

Start offset when printing

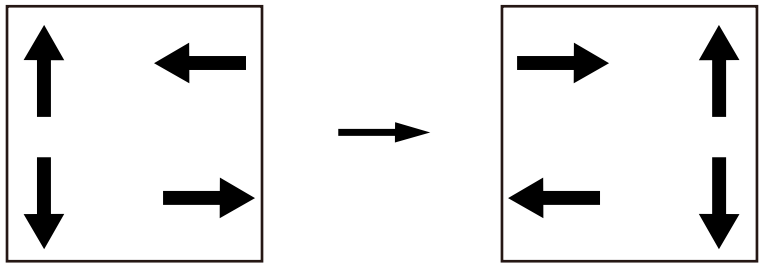
Every direction

+1mm +2mm +3mm +4mm +5mm

-1mm -2mm -3mm -4mm -5mm

(Everything didn't change, only the direction.)

Riso is not a transparent tool.



Riso is not a transparent tool.

Riso is not a transparent tool.

Therefore:

What I perceived as "left/right/up/down" will be slightly offset to another direction after passing through the paper feed path and the roller rotation.

Each shift follows the same rule, revealing patterned deviation rather than random error.

→

There is a 90° directional change.

I found:

Adjust to the left → Actually moves down

Adjust down → Actually moves right

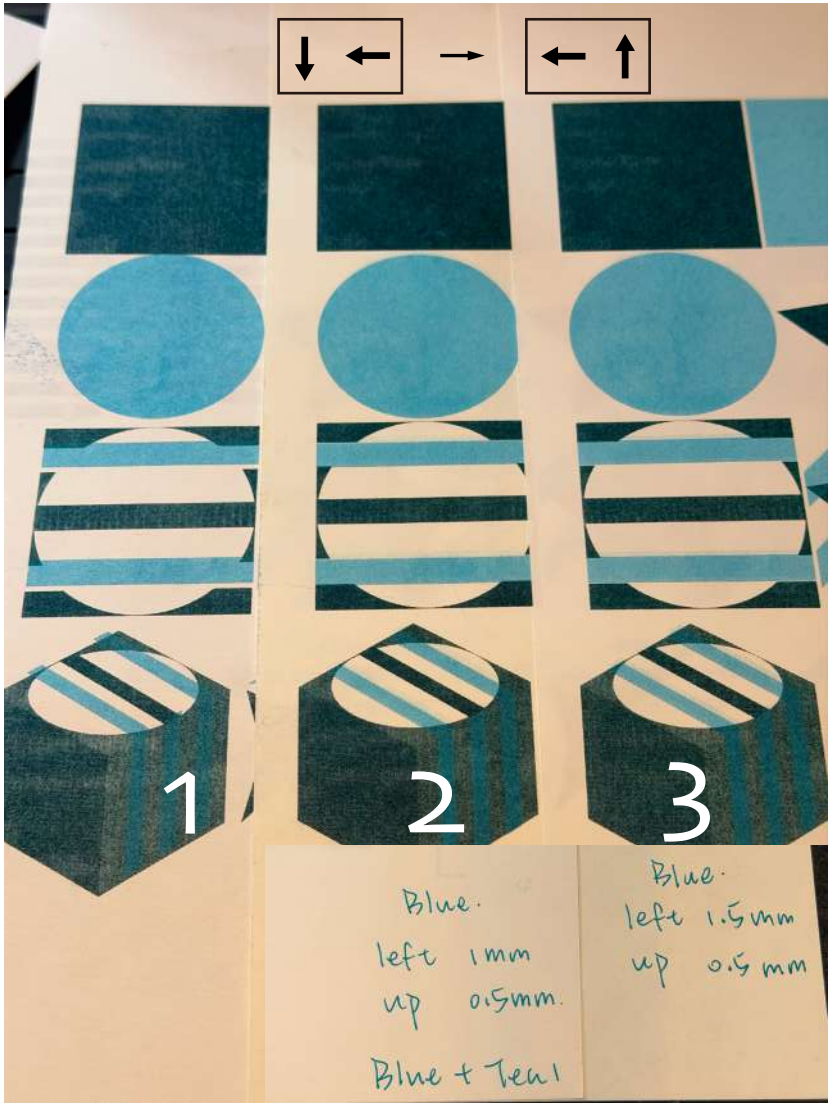
Adjust right → Actually moves up

Adjust up → Actually moves left

The Hack — Reverse Use of Calibration

Instead of correcting misalignment, I treated it as a variable.

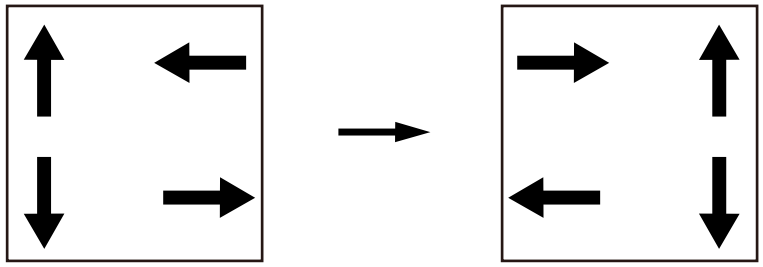




All other parameters were kept constant to isolate the behaviour of calibration.

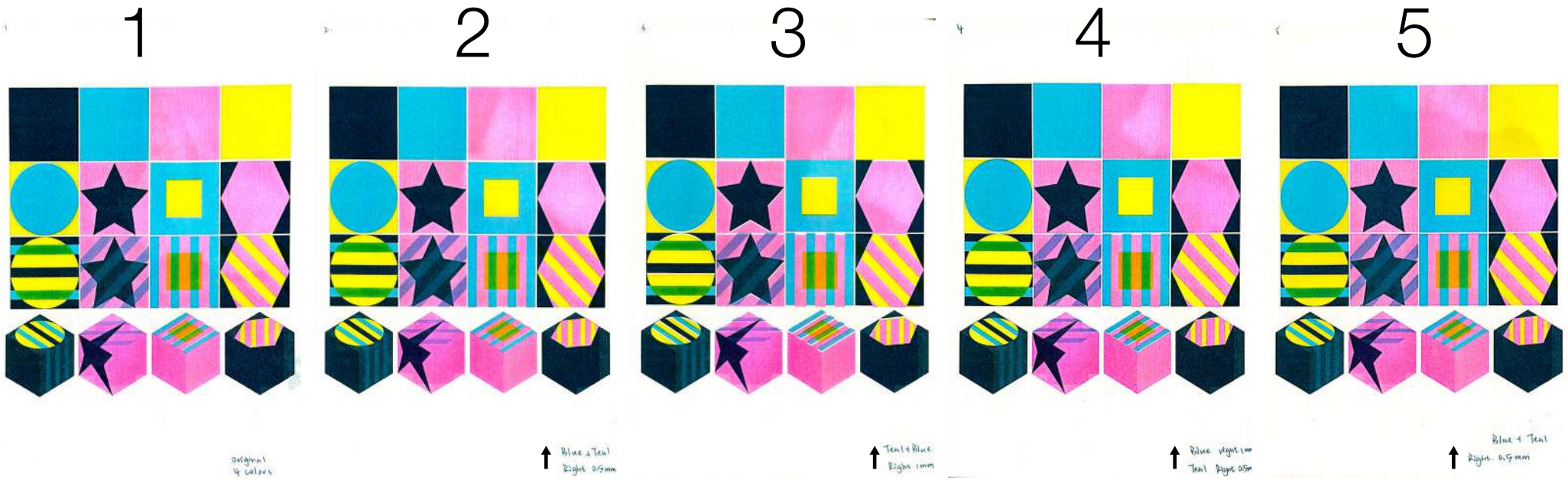
The Hack — Reverse Use of Calibration

Fixed Conditions	Variable
Format	Alignment Only
Colour	
Paper	
Order	



Instead of fixing misregistration, I used this directional shift as a rule to deliberately create controlled spatial displacement.

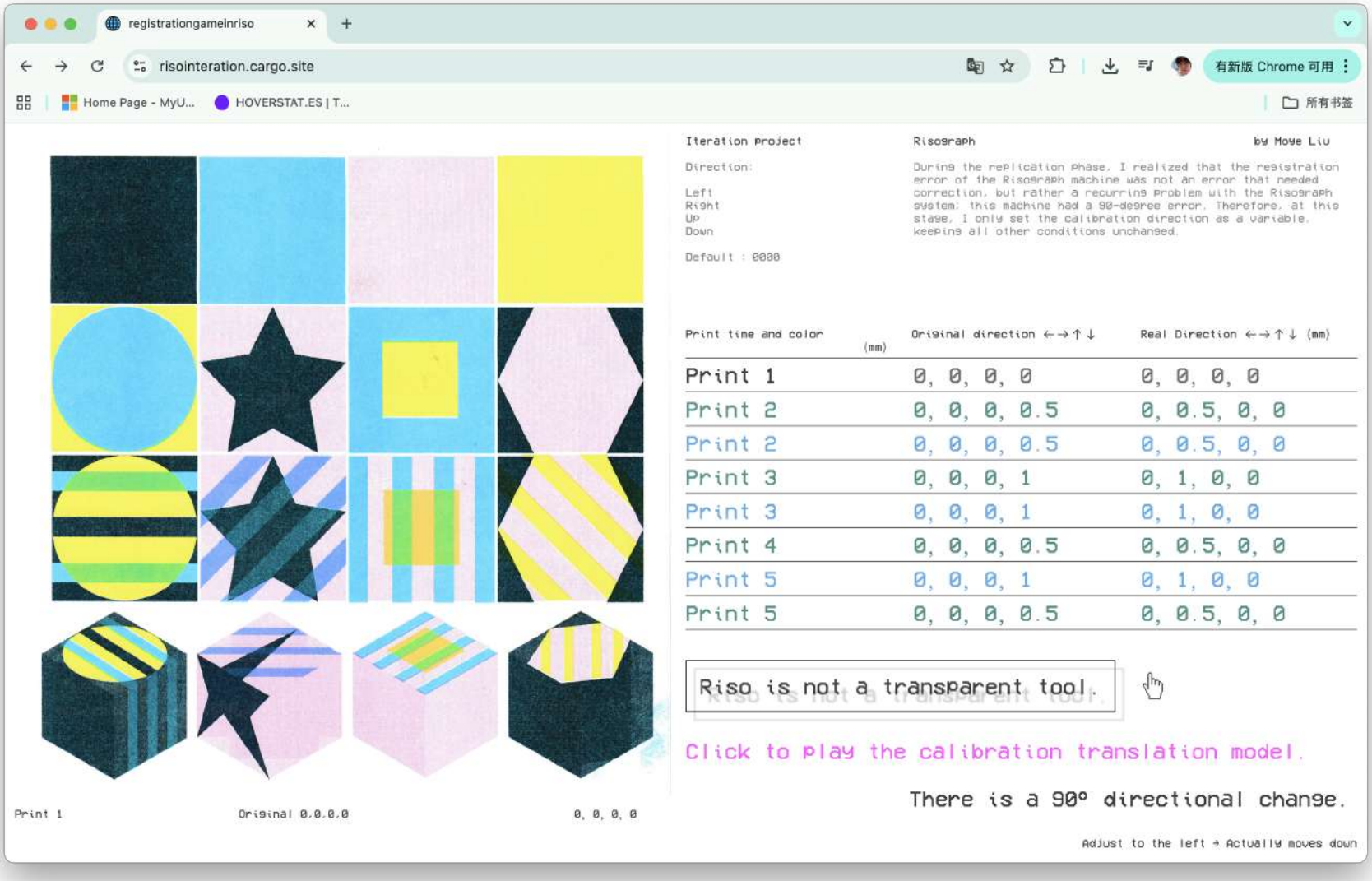
From 1-5, by using the discovered pattern to perform reverse calibration, the pattern can indeed be positioned correctly.



Digital Extension — Simulation

https://risointeration.cargo.site/

When you enter the webpage, scrolling down to the left shows the record of the positional changes of the original printed material during iterations, while the right side shows the numerical values, i.e., the patterns of change.

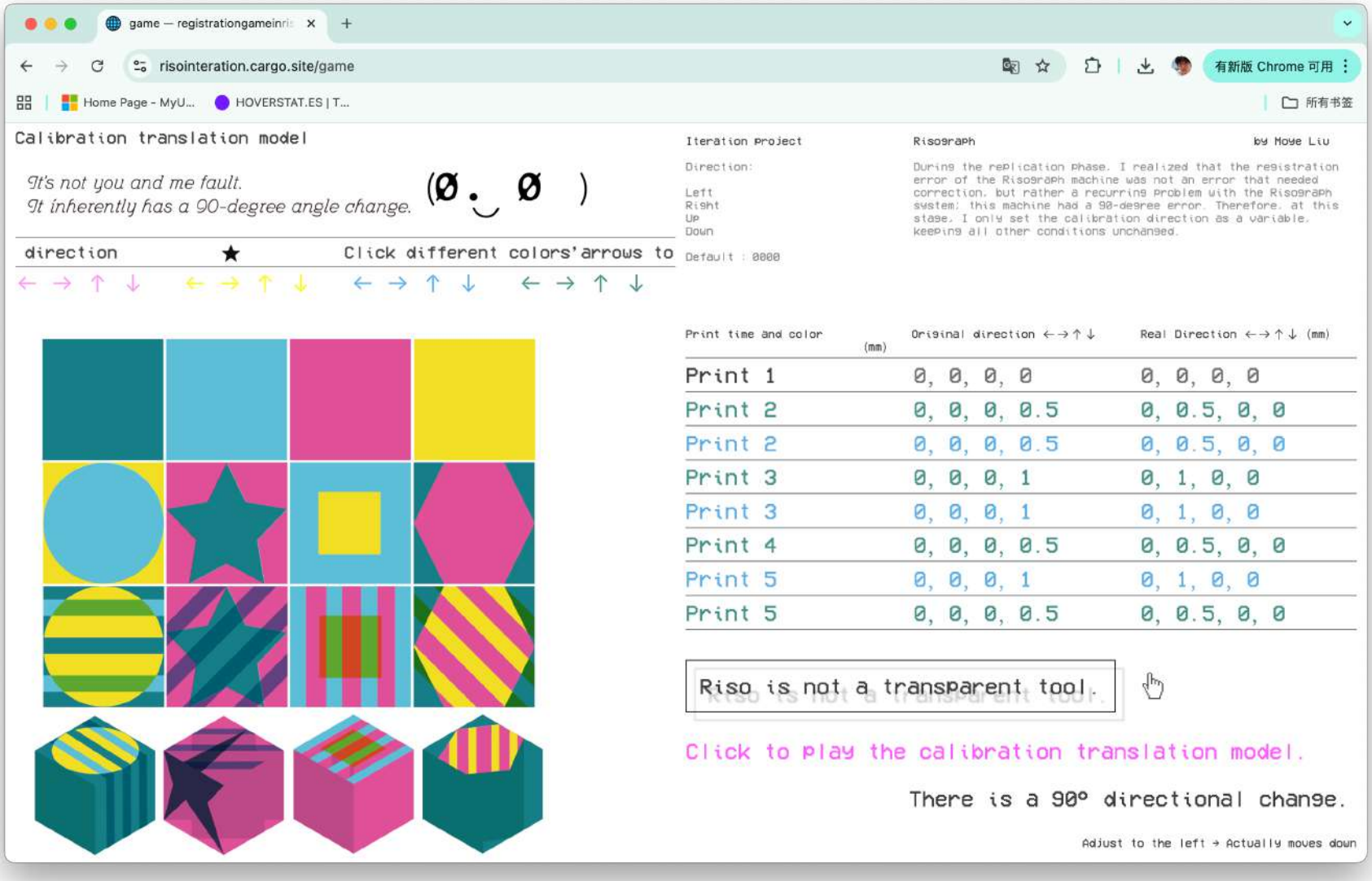


Digital Extension — Simulation

I translated the calibration logic into an interactive system, externalising the pattern.

https://risointeration.cargo.site/

- Extracted rule
- Modelled translation
- Externalised behaviour



up -> left (-x)
right -> up (-y)
down -> right (+x)
left -> down (+y)

Digital Extension — Simulation

- Extracted rule from physical print
- Modelled directional translation
- Externalised calibration behaviour

When you click the arrow, the icon will move 90 degrees counterclockwise.



Video to show how it works:
https://youtu.be/DYQh9asgT1c?si=WO43eurX51oupszr

The simulation emphasises that control is always mediated through a system rather than executed directly.

Conclusion — What This Project Does

- It does not aim to fix the machine
- It does not seek perfect reproduction
- It does not eliminate instability

Instead, it works with instability as a form of knowledge.



Calibration → Rotation → Offset