* **What's unexpected about this thing you just made?**

CA is a great way to visualise how complex behaviours can develop from simple rules.
At the same time, CA allows the computer to caculate and generate a large number of different pictures under the basic rules which made by us, with very small data adjustments.

CA, as a mathematical model which simulates the evolving way of cells, is initially just the equations. But after coding to visualise them, CA can project to a large number of the discussions of the rule-based science. For examples: the shell textures, snow textures,trees growing modes and other natural micro growth patterns, even predict the reality or the emotion changing.

Coding uses a essential perspective on discussion, and the outcome is unmanageable and uncertain.

* **What do you understand better or differently about your tool or medium now?**

Coding make the concept dominates the picture, the outcome is also a self-description of the beauty of math or other concept, removing some of the designer's subjective aesthetic control.

Calculation produces overwhelming pictures, leading to a scattered and random result, but can't produce a focused visual outcome.

* **Did it pose a particular technical chal- lenge?**

Coding requires human to create the rules, and in traditional CA this rule is broad (includes all the possibilities without any specific meanings), but when CA project to another topics, these rules need to be restricted.

For the same mathematical problem, different shapes or directions need completely different code to visualise them, so always hard to change the overall forms.

* **What kind of output or knowledge does this tool or medium favor?**

Random, dense, massive and geometricised images.
Good in discussions about micro, rules and predictions.

* **What relationship does it have to graphic or communication design?**

He can start from a concept, superimpose all the processes, and ultimately lead to a process-oriented visual result. The subjective aesthetic control of the designer is minimised.

In the second week of practice, I continued to iterate on the Cellular Automata code.

The book mentions a method of reinventing the original system (page 41, first paragraph, second paragraph), i.e., iterating the original system by tapping into the technical potential of one system through a juxtaposition with another system. As for the choice of direction of iteration, there are three main types, which I will analyse one by one and find the corresponding direction in my practice:

Part 1 - removing parts that are detrimental to maintaining good coordination within the system. (Page 47, second paragraph)

In my practice for the Cellular Automata coding system, I am reminded of the randomness that is most common in coding technologies, coding as a human produced instrumental technology, its uncontrollability can be a prediction of the unknown, which is the good part, but the other, more negative, result is the unintelligibility and lack of individualised choices to intervene, which produces a result that tends to be fragmented and cold. 'In mechanical evolution, the law of balance or the interrelationship between subsystems is much less critical than in nature ' (p. 49, fourth paragraph) i.e., in mechanical evolution, the relationship between all functions must remain relatively balanced. In practice, therefore, I juxtapose the simulation of biological survival functions in Cellular Automata programming with individualised human emotions, in an interactive way, in an attempt to reach a dynamic balance between code generation and individual human intervention.

Part 2 - Selecting the main strengths of the system and modifying it as much as possible in accordance with the principles of the system's own macroscopically more unified movement. (p. 47, fourth paragraph)

In thinking about the coding system, its most abstract and unifying principle is its advantages for computation and generation. If one narrows it down to Cellular Automata, its prediction and visualisation of developments in various fields is its most irreplaceable and dramatic advantage (p. 41 'This idea, an essential contribution of the Italian Futurists, would mean that every new technology should be explored for its underlying potential anddramatised to its furthest extent."). Therefore, I chose to go in the direction of emotion prediction and visualisation, combined with the fact that Cellular Automata programming can mimic the characteristics of biological systems, and I tried to depict people's emotions, which are difficult to depict and change rapidly.

Part 3 - Almost any machine can be put together to produce a third, as long as there is a need for the human brain to exist. (Page 50, first paragraph)

This section I combined with the section on page 44. In it, the author introduces the concept of 'holon', 'a member of an open, limited set which is waiting to be extended', and suggests that the system is not a system with two sides - potential and limitations. The authors propose a concept of 'holon', 'a member of an open, limited set which is waiting to be extended', and a reflection on the dual nature of the system, its potential and its limitations, i.e. that the generative uses of Cellular Automata programming are unlimited, and that it can be used in contexts other than those of the usual scientific and computational domains such as computer computation, model simulation, etc., and yet at the same time it is subordinate to the formulaic rule-based language. I therefore chose to put it back in a literary context, with the lexical splicing and framing of the language, echoing its formula-based nature (the text mentions a new interpretation of the possibility of analogical juxtapositions, where everything has a related part, and one needs to look for the similarities), and also utilising its predictive power, generating more possibilities to be used for revealing the direction of the emotions.

Finally, the authors also mention the cost for splicing its subsystems - the exclusionary effect, i.e., the localised functioning of a more prominent self-representation.

This places a higher demand on the choice of juxtaposing the two, i.e. whether there is a need for the fusion of the two, and carefully considering all the consequences of their fusion. This will be a subsequent guide to the directions I need to consider.

References list

Jencks, C. and Silver, N. (2013) Adhocism: The case for improvisation. Expanded and updated edition. Cambridge, MA: MIT Press. (First published in 1972).

CommonSubjects

"book","method","system","direction","practice","Cellular","Automata","coding","technology","randomness","result","law","interrelationship","functions","simulation","programming","emotions","principle","computation","prediction","visualisation","developments","fields","advantage","author","concept","holon","member","set","uses","contexts","domains","language","power","possibilities","consequences","fusion","text"

CommonObjects

"original","system","technical","potential","juxtaposition","mechanical","evolution","balance","biological","survival","functions","dynamic","human","intervention","generation","literary","context","lexical","splicing","framing","predictive","power","direction","emotions"

Punctuation

",",".","’","’","(",")","-","\"",":",";"

Positive Verbs

"reinventing","tapping","analyse","reaching","depict","mimic","generate","reveal","extending","reflecting","introduces","considering","explored","dramatised","propose","juxtapose","interpreting"

Positive Adverbs

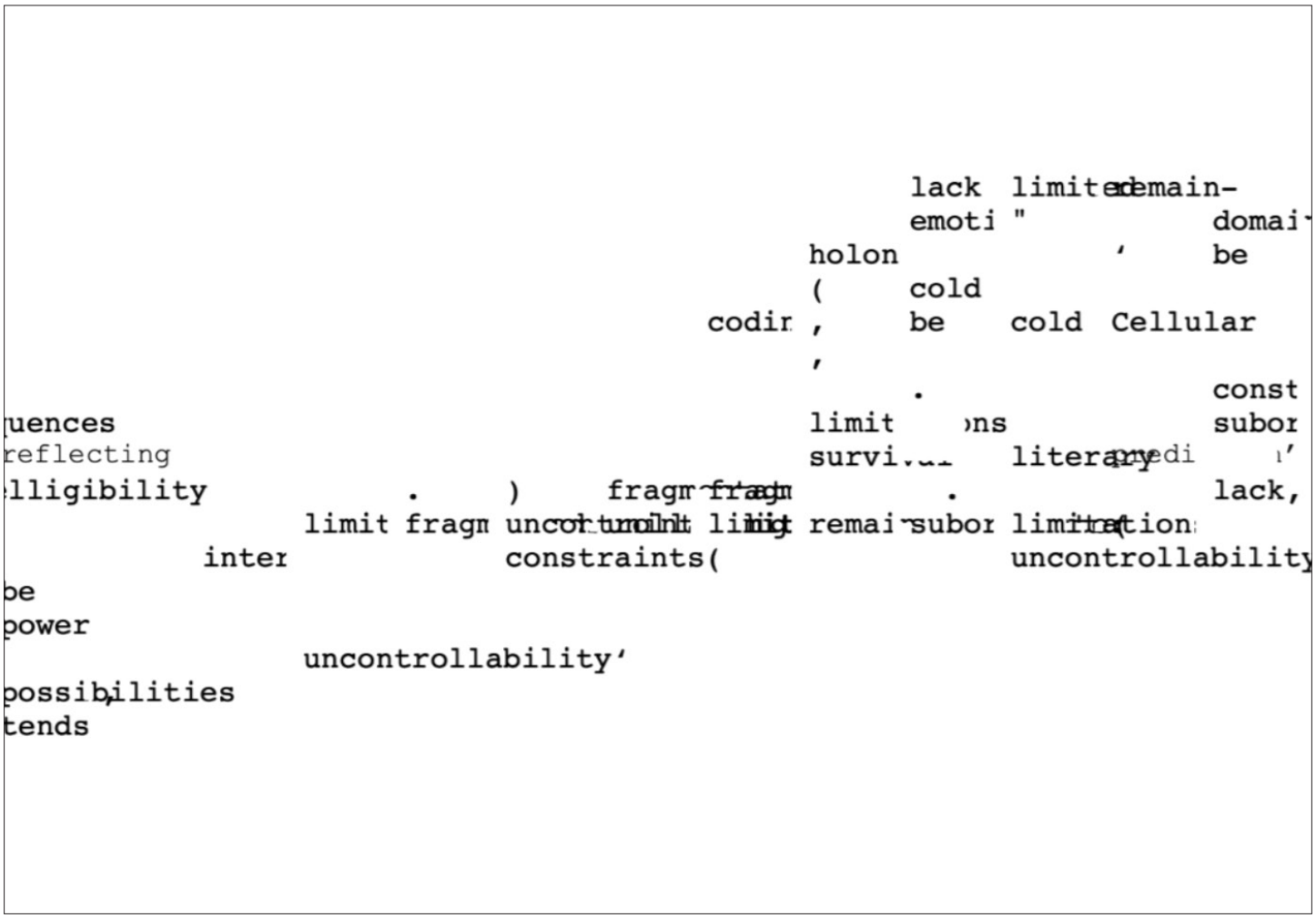
"prediction","unknown","individualised","choices","balance","human","emotions","potential","possibilities","computational","scientific","generation","reaching"

Negative Verbs

"lack","intervene","tends","remain","be","limited","subordinate","fragmented"

Negative Adverbs

"uncontrollability","unintelligibility","fragmentation","cold","limitations","constraints"



I extracted subjects, predicates, objects, adverbs, and symbols from the content of the writing and differentiated them into positive and negative lexicons. When the code ran, I clicked on the words in the screen that I was more concerned about and allowed the positive and negative words to self-perpetuate and evolve based on my choices. I found, however, that the translated content was often difficult to convey in a continuous and coherent manner, stemming from the fact that the logic of the Cellular Automata code that I was using treated my text more as a square than as text, which also made the translated result of the text more like a visual poem, but lacking in real meaning. So I started to think about the choice of input text and how to make the output form more coherent content.