

Methods of Iterating

Written Response

In this unit I visualised data using a data visualisation tool called Gephi. In this process, I became the data carrier or 'translator' and visualised the direction of the arrows of the edges and the size and colour of the nodes in Gephi to represent the directionality and weight between the data in the Excel file.

I then moved the position of each node by hand and changed the colour one by one to mimic the project I had chosen, as I did not have the same data file as the project. In the process, the hierarchy of the data broke down and the purpose of 'data communication' was lost, i.e. the message of one side was transformed for aesthetic correction.

Although 'Gephi' has the purpose of data visualisation, I found it to be quite limited graphically. In an environment where not even the shape of the nodes can be changed, I began to consider the question ***"How can graphic designers convey a sense of context in a design environment where visual representation is extremely limited?"***

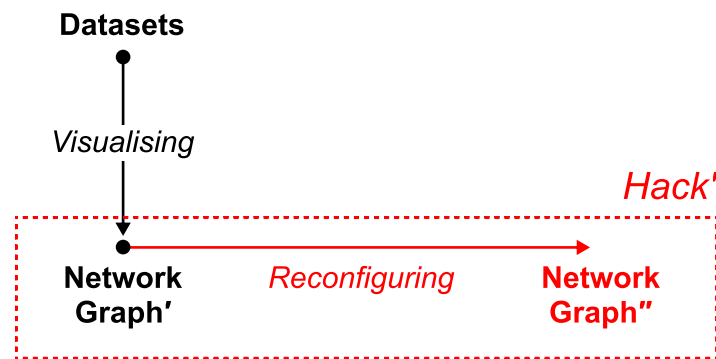
I would like to further explore minimalist graphic design for the purpose of communicating data by experimenting with how this messy data can be organised by applying the principles of 'minimalism' and 'minimal design'.

Methods of Iterating Written Response

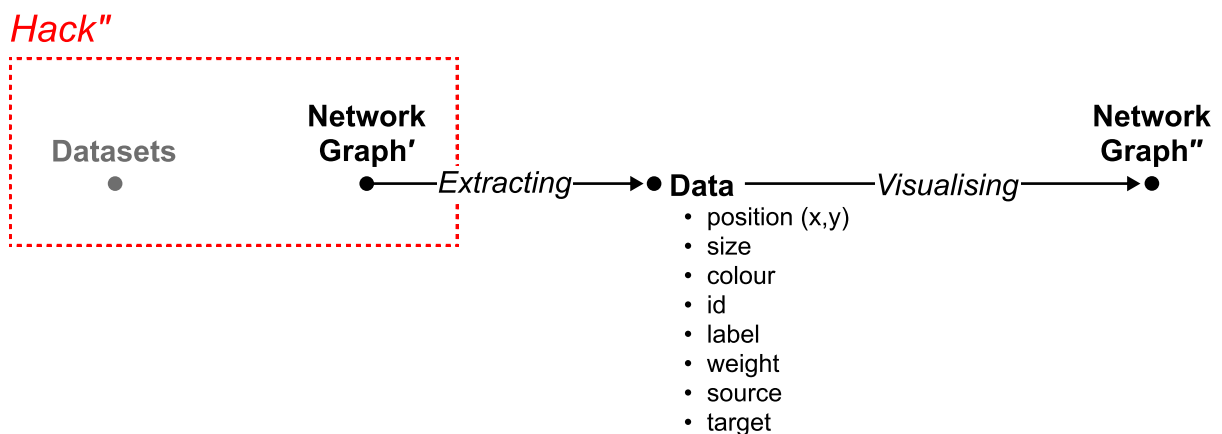
In this project, the tool investigation began with the question, ***"How can graphic designers convey context in a design environment where visual representation is extremely limited?"***

To explore new graphic possibilities in a data-driven program, I conducted experiments using various forms of data files, including both static and dynamic data, allowing for the creation of diverse outcomes.

The first 'Hack' involved importing data and editing visualized graphics. By directly editing the graphics, I could create specific visuals, departing from the conventional purpose of data-driven programs and using them for graphic editing purposes. This liberation from the initial goal of accurately conveying 'data' or 'content' through tools like 'Gephi' allowed me to interpret data through a graphic lens.



The second 'Hack' focused on graphic replication experiments. Delving deeper into a graphic-centric perspective, I generated new nodes and created new connection lines in the absence of data files. After extracting this as a data file, I re-imported the same file into the 'Gephi' tool. While the nodes in the network were precisely connected based on the data file, the graphic form differed from the original. 'Gephi' presented a new constellation from the same dataset.



While the data file retained node attributes and information, the unpredictability inherent in the 'Gephi' tool disrupted the original appearance of the graphics. In this process, although I didn't directly intervene in the output, 'Gephi' acted as an *'uncontrollable and unpredictable elements that can alter the course of events.'* Observing how the constraints expressed in the data file were differently represented depending on the environment, I concluded that the *'subjectivity'* expressed by the author in the *'Conditional Design workbook'* had intervened. This suggests that 'Gephi's subjective judgment of graphics resulted in unpredictable outcomes from closed data, and, paradoxically, open outcomes within a constrained environment.

... I believe that today's design explores the programmatic logic of constraints-technological, economic, ecological, and so on-that are embraced as affordances rather than obstacles to the creation of new work. (...)

In this realm, the subjective and objective are dialogical qualities rather than mutually exclusive concepts, populating a spectrum of positions in the process of designing. (p.6)

With the insights gained from this process, I referred to the *'Conditional Design Workbook'* and created two simple games.

X Play with four players. X Each player has stickers: small, medium, large size. X The players take clockwise turns lasting 30 seconds. X Use a stopwatch.

- 1, • First round, each player:
Arbitrarily place a sticker on the paper.
- 2, • Next turns:
Draw a line and place a sticker.
 - 2.1, Between the two stickers there should be only one connection.
 - 2.2, Large stickers should have the most lines connected to them.
 - 2.3, Small stickers should have the fewest lines connected to them.
- 3, • Stop when the stickers are gone.

X Play with four players. X Each player has a colored pen: red, green, blue, or black. X The players take clockwise turns.

- 1, • First turn, first player:
Arbitrarily draw a dot on the paper.
- 2, • Following round, next player:
Write the position of the next dot to be connected to the drawn dot.
 - 2.1, Use numbers to indicate the position of the dot.
- 3, • Next turns:
Draw a dot following the position indicated by numbers and write the position of the next dot.
 - 3.1, The line must connect two dots.
- 4, • Stop when you cannot connect dots.

Bibliography

Conditional Design Workbook, Amsterdam: Valiz, 2013.

Methods of Iterating Written Response

In the process of creating my written response, I referenced the 'Cross Year Studio: Technology2' workshop held at CSM on 26 January 2024. In this class, I noticed similarities between the way the AI generator 'Chat GPT' reads text and the way the 'Gephi' tool interprets data: both tools simplify text and then interpret it by creating a network map of relevant actors.

Therefore, to render my written response, I used Chat GPT to tokenise the text and then linked the actors together to create a data file for Gephi. Through this process, I found that iterative research on 'Gephi' helped me understand how to communicate with other generators outside of it.

Initially, I classified and transformed the data according to the criteria suitable for the 'Gephi' environment. I crafted a prompt to generate a list of actors that would serve as nodes within 'Gephi.' This approach involved establishing fundamental elements aligned with the tool's environment.

List of Actors

X Could you list all the actors in the following text?

- | | |
|---|---|
| <p>1, • Author/Experimenter/Designer:
The person conducting the experiments and narrating the process.</p> | <p>6, • Constraints:
Technological, economic, ecological, and other constraints mentioned in the realm of design.</p> |
| <p>2, • Tool:
Refers to the software used in the experiments, particularly 'Gephi.'</p> | <p>7, • Subjectivity:
The subjective judgment expressed by the author and attributed to the 'Gephi' tool.</p> |
| <p>3, • Data Files:
Various forms of data files, including both static and dynamic data, play a role in the experimentation.</p> | <p>8, • Conditional Design Workbook:
Source of the concept of 'subjectivity' expressed by the author.</p> |
| <p>4, • Graphics/Visualized Graphics:
The visual representations created or manipulated during the experimentation.</p> | <p>9, • Subjective and Objective:
Concepts mentioned in the realm of design, emphasizing their dialogical qualities.</p> |
| <p>5, • Nodes and Connection Lines:
Elements within the graphics, manipulated during the second 'Hack.'</p> | |

Subsequently, in the second prompt, I incorporated conditions to obtain data playing the roles of 'Source' and 'Target.' Based on conditional prompts, I organized actors according to 'relationships' and frequency of mentions. Based on the fact that GPT or 'Gephi' tokenises sentences when reading information, I thought it would be efficient to set the importance by analysing how often the actor is mentioned. This judgement is based on insights gained from watching my colleague Evelyn's project on the workshop.

Prompting

X Create a datafile to create a network map.

- 1.1, Generate the influencing Actor in 'target' and the influenced Actor in 'source'.
 - 1.2, They can be duplicated.
 - 1.3, Use only the Actor list you generated at the beginning.
 - 1.4, Write a description of how each target and source affects and is affected by each other.
- 2.1, Write a number from 3000 to 10000 to indicate the importance of each relationship based on how often it is mentioned in the essay.
 - 2.2, Add this to the relationship code you generated above.

```

"target": "Title",
"source": "Title",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 6000
}

"target": "Data Files",
"source": "Data Files",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 4500
}

"target": "Graphics",
"source": "Graphics",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 7000
}

"target": "Subjectivity",
"source": "Subjectivity",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 8000
}

"target": "Reader",
"source": "Reader",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 5000
}

"target": "Author",
"source": "Author",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 5000
}

"target": "Data Files",
"source": "Data Files",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 4500
}

"target": "Graphics",
"source": "Graphics",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 7000
}

"target": "Subjectivity",
"source": "Subjectivity",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 8000
}

"target": "Reader",
"source": "Reader",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 5000
}

"target": "Author",
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"importance": 5000
}

"target": "Author",
"source": "Author",
"description": "The designer utilizes the 'Gephi' tool.",
"importance": 5000
}
    
```

Generated Documents in 'Chat GPT'

In the process, I organised the data according to the system structure I had set up, 'Weight is visually the distance between nodes, which becomes thicker or thinner depending on the importance of the connections between each node'.

These data were recognised by 'Gephi' without any errors.

Datasets

Id	Label
Experimenter	Experimenter
Tool (Gephi)	Tool (Gephi)
Data Files	Data Files
Graphics	Graphics
Nodes and Connection Lines	Nodes and Connection Lines
Constraints	Constraints
Subjectivity	Subjectivity
Conditional Design Workbook	Conditional Design Workbook
Programmatic Logic of Constraints	Programmatic Logic of Constraints
Affordances	Affordances
Subjective and Objective	Subjective and Objective
Reader	Reader
Author	Author

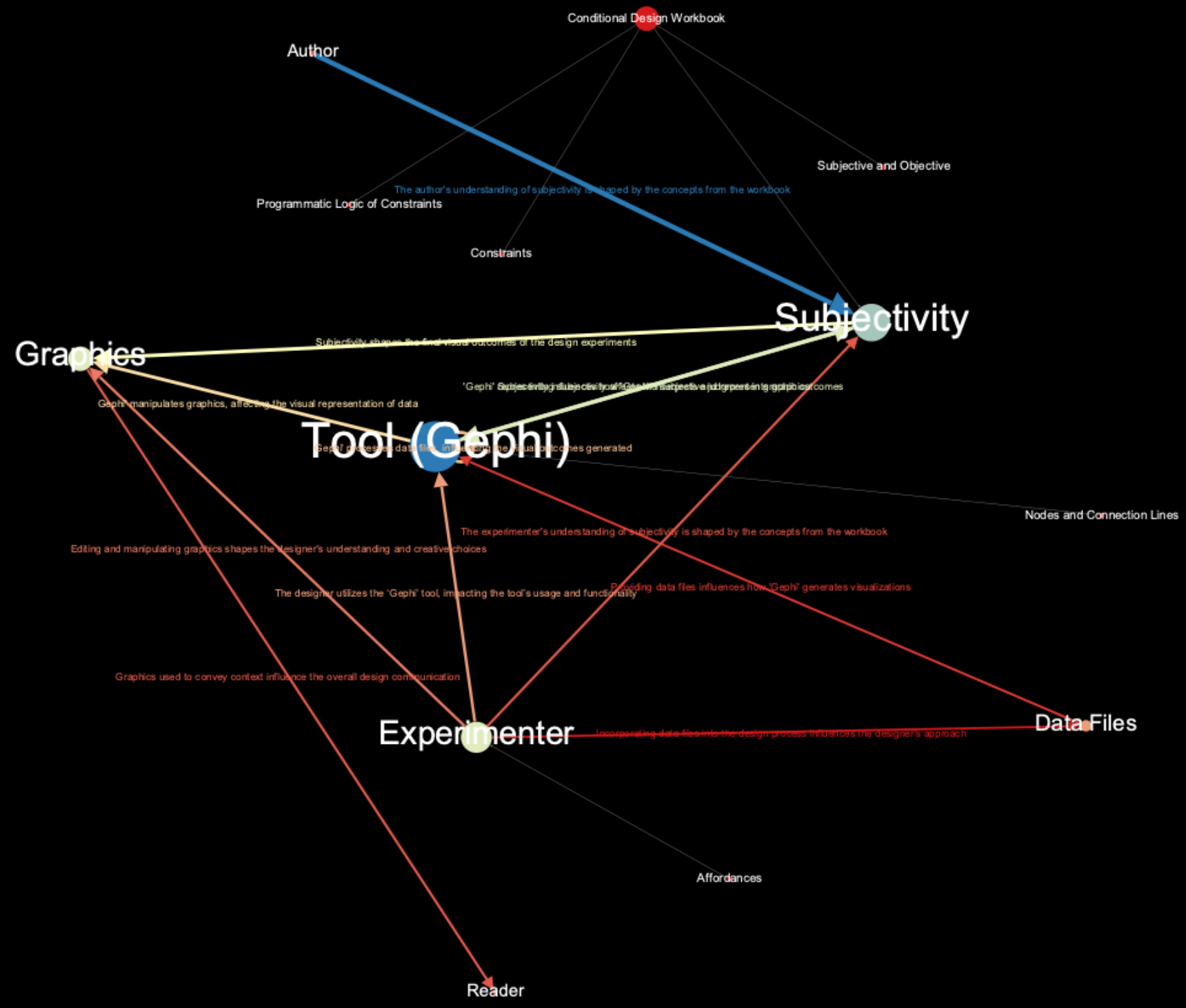
Source	Target	Weight	Label
Experimenter	Tool (Gephi)	6000	The designer utilizes the 'Gephi' tool.
Experimenter	Data Files	4000	Incorporating data files into the design process.
Experimenter	Graphics	5500	Editing and manipulating graphics shapes.
Tool (Gephi)	Graphics	7000	'Gephi' manipulates graphics, affecting the design process.
Tool (Gephi)	Tool (Gephi)	6500	'Gephi' processes data files, influencing the design process.
Tool (Gephi)	Subjectivity	8000	'Gephi' representing subjectivity affects the design process.
Data Files	Tool (Gephi)	4500	Providing data files influences how the design process is conducted.
Graphics	Reader	5000	Graphics used to convey context information.
Author	Subjectivity	6000	The author's expression of subjectivity influences the design process.
Subjectivity	Tool (Gephi)	8000	Subjectivity influences how 'Gephi' is used.
Subjectivity	Graphics	7500	Subjectivity shapes the final visual outcomes.
Experimenter	Subjectivity	5000	The experimenter's understanding of subjectivity is shaped by the concepts from the workbook.
Author	Subjectivity	5000	The author's understanding of subjectivity is shaped by the concepts from the workbook.

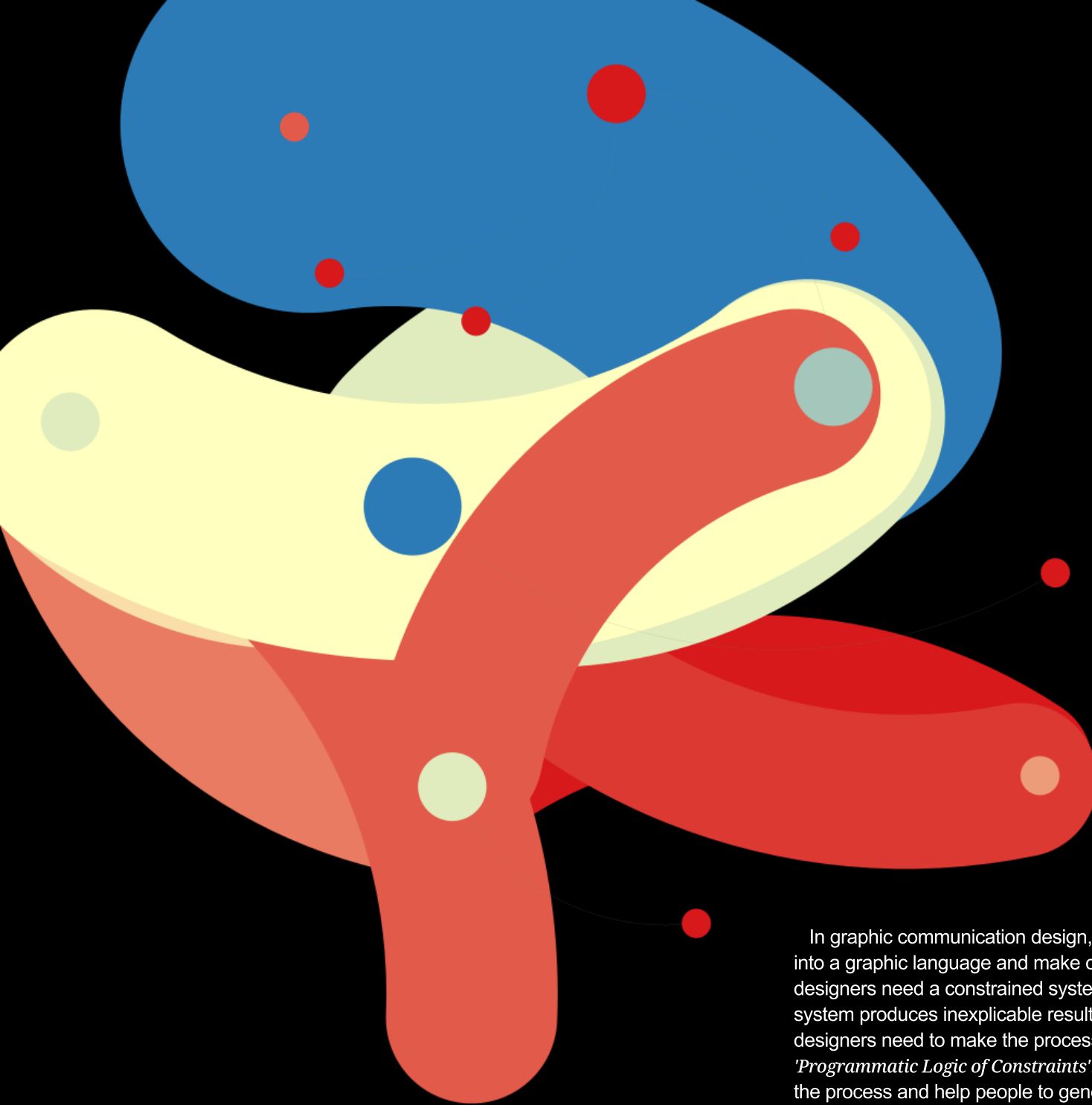
The screenshot shows the 'Data Laboratory' window in Gephi. It displays a table with columns for 'Source', 'Target', 'Type', 'Id', 'Label', 'Interval', and 'Weight'. The table contains 11 rows of data, matching the dataset provided. The 'Weight' column values are 6000, 4000, 5500, 7000, 6500, 8000, 4500, 5000, 6000, 8000, and 5000. The interface also shows various data manipulation tools like 'Add column', 'Merge columns', 'Delete column', etc.

Convert to csv file

Bibliography

Conditional Design Workbook, Amsterdam: Valiz, 2013.





This image is a graphic created using a tool called Gephi. It contains the same text as the previous network map, but is visualised according to a visual system developed through research. The thickness of the lines, the size of the shapes, the colours, the distance between the connecting lines, and so on, are all influenced by different elements, but ultimately they work in a unified system.

In graphic communication design, designers need to simplify the incoming information into a graphic language and make connections between each element. In this process designers need a constrained system. A random and overly free graphic language system produces inexplicable results and prevents us from communicating. Therefore, designers need to make the process logical and understandable by setting up a '*Programmatic Logic of Constraints*'. These constraints refine the logical system, extend the process and help people to generate new ideas.