Continuity in Choices

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1 INTRODUCTION

Consider a sketch about which the artist has no idea prior to the process of drawing, but develops on his way along stepwise. A list of distinct sketches from which he can choose for each step, right from start to the end, is given. Closing the loop marks the last step in the sketch.

The sketch, two types will be elaborated below.

Type 1: Here, anything but the first choice is used for each step. The idea is to make a sketch of close second choices. The process is repeated till the loop is closed.

Type 2: Here, anything but the first and second choice is used for each step. The loop is closed with all the steps made out of third choices.

2 ANALOGY IN MATHEMATICS

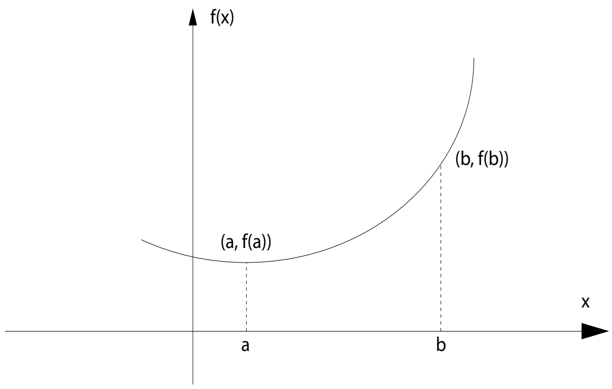

Figure 1: fig f

First derivative at a, $\dfrac{df(x)}{dx} = \lim\limits_{(b-a)\to 0} \dfrac{f(b)-f(a)}{b-a}$, and Second derivative at a, $\dfrac{d^2f(x)}{dx^2} = d\left(\dfrac{df(x)}{dx}\right)$

'n' is the sketch count in the list and 't' and 'l' are the sketches dismissed.

Let the list of sketches be set $(x^1, ..., x^n)$. $f^{'}(x)$ is the sketch drawn by choosing for each step, anything in the set, but x^t.

$f^{''}(x)$ is the sketch drawn by choosing for each step, anything in the set, but x^t and x^l.

3 INFERENCE

1. If $f^{''}(x) = 0$, then for some x, $f^{'}(x)$ is a constant. Consequently, f(x) is not a continuous function.
2. If $f^{''}(x) \neq 0$, then $f^{'}(x)$ is never a constant for any x. Consequently, f(x) is a continuous function.

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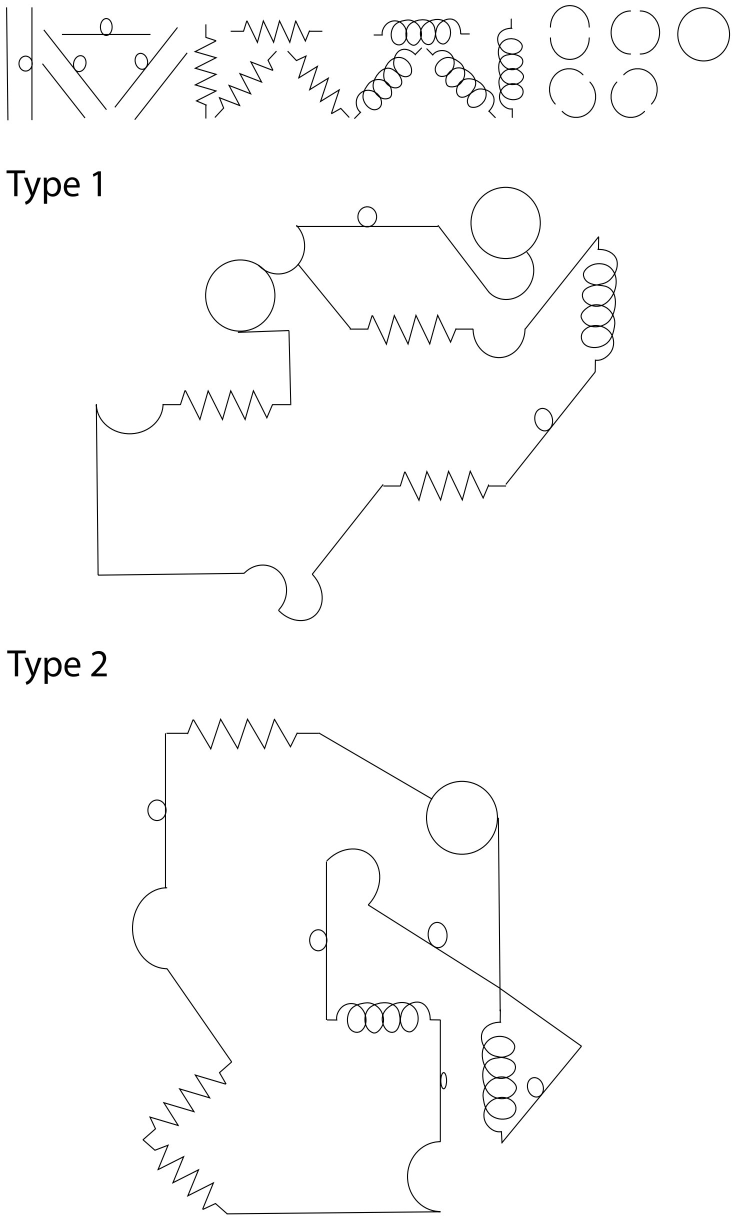
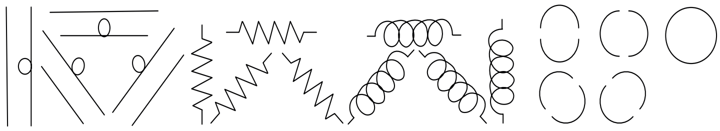
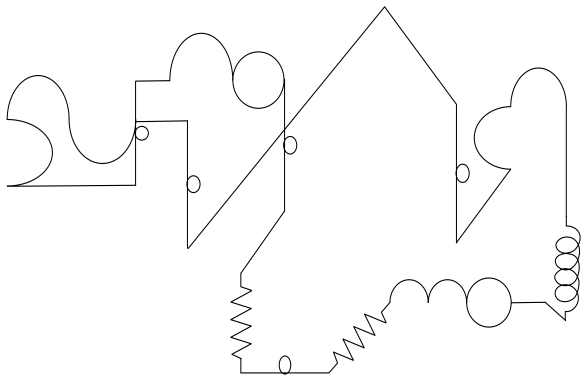


Figure 2: fig f



Type 1



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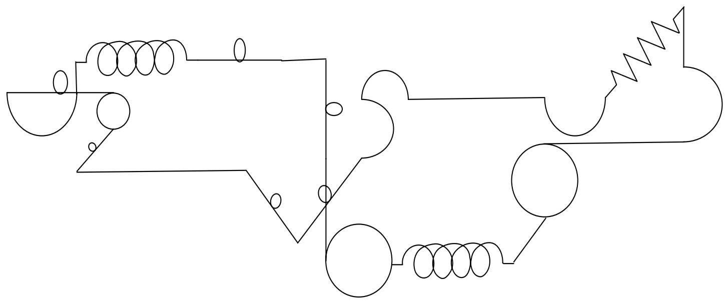

Figure 3: fig f

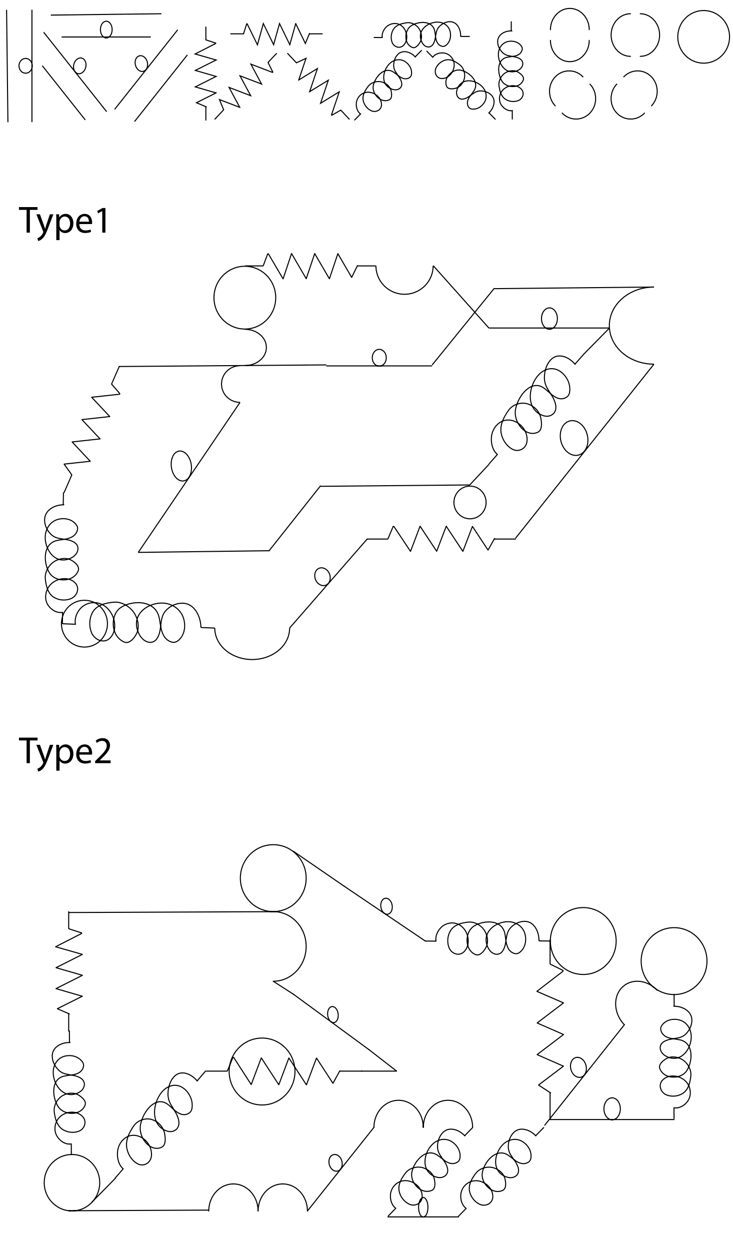

Figure 4: fig f

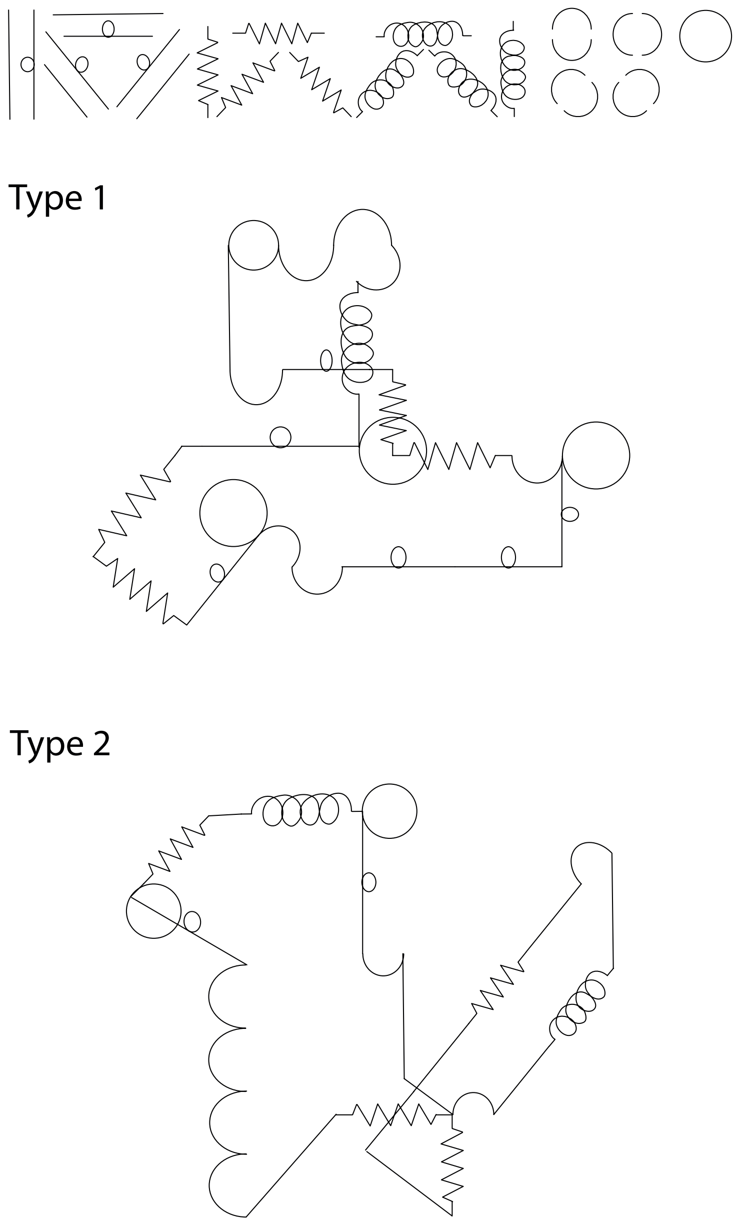

Figure 5: fig f