ENGL301
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Three Definitions Assignment

Parenthetical: The painting is *recursive* (like a picture within a picture).

Sentence: Recursion is a problem-solving method that involves breaking down a problem into smaller subproblems. This occurs until the subproblems are easy or small enough to be solved.

Expanded: Recursion is a problem-solving method that is present in a variety of disciplines, including: mathematics, computer science and art. Until the 1960s it was a controversial method in computer science because it wasn't considered efficient or practical. However, times have changed and it's now considered one of the central ideas of computer science.

Recursion combines smaller and easier versions of the problem at hand to find a solution. Fittingly, the term “recursion” is derived from the Latin words “*recursio*” and “*recurrere*”, which translate to “return” and “to run back, return” respectively.

Perhaps, the most famous example of recursion is the art style known as the “Droste Effect”, as shown in Figure 1. It consists of a picture depicted in itself indefinitely until it isn't possible to draw a smaller version of the picture. The smallest version is called the “base case”. Once the base case has been found, it can be used to find the next smallest version of the problem.

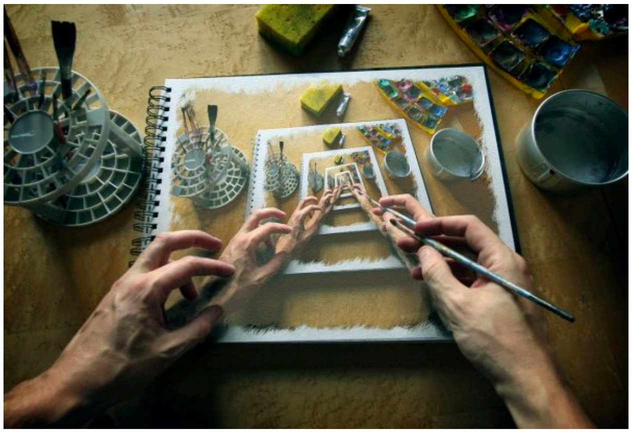

Figure 1

Another good example of recursion is the Fibonacci sequence. The Fibonacci sequence begins as follows: 1, 1, 2, 3, 5, 8, and then continues forever. Each number is the sum of the two previous numbers. For example: five is the sum of two and three. Each number depends on a number before it. In order to find the fourth number in the sequence I have to first find the third number. I don't know what the third number is so I have to find the second number and the first number. I can't solve what the fourth number is until I know what the previous three numbers in the sequence were. As the etymology has suggest, I have to keep "running back" in order to solve the recursive problem that is the Fibonacci sequence.

Works Cited

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Rubio-Sanchez, Manuel. *Introduction to Recursive Programming*. Boca Raton, CRC Press, 2018.