Max Order: A Tale of Creativity

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Abstract

We present a graphic novel project aiming at illustrating current research results and issues regarding the creative process and its relation with artificial intelligence. The main character, Max Order, is an artist who symbolizes the difficulty of coming up with new, creative ideas, giving up imitation of others and finding one's own style.

1 Introduction

Max Order is an artistic project aimed at exploiting the power of visual storytelling to share results and objectives of current researches dealing with artificial intelligence and creativity, as well as considerations about the creative process itself and on how machines can help to foster it.

2 Comics to illustrate artificial intelligence?

To illustrate the story of Max Order, an artist in lack of inspiration, stuck in plagiarism and unable to find her own style, we have chosen the medium of comics. The word 'comic' implies the unfortunate suggestion of a medium inherently lacking serious intent, and it has been associated in the past with non-serious and childish audiences. This surely does not reflect the reality of comics; indeed, if we think of comics as "juxtaposed pictorial and other images in deliberate sequence, intended to convey information and/or to produce an aesthetic response in the viewer" [McCloud 1993], we realise that this kind of visual communication has been exploited across thousands of years of history. Graphic narratives have a long history of success in terms of instruction and engagement, stretching back millennia. From the cave paintings of Lascaux, France (circa 17,000 BC) to the tombs in ancient Egypt (circa 1200 BC), to more modern examples such as the cathedrals' stained-glass windows or Middle Ages' frescos, the examples of visual narrative in the historical record are innumerable.

2 The storyline

The story of Max is told in a graphic novel of a particular nature. First, there is the story of Max herself (Figure 1). When she was a kid, Max spent her time drawing on her parents' house walls (Figure 2): it was clear she was going to be an artist. But growing up, in conflict with her father

Figure 1: Max Order, main character

whom work is precisely to copy leadsheets for orchestra conductors, and with a fine arts school system failing to help her, she feels compelled to copy other people's paintings. She got trapped in the impossibility to create anything new, anything her's.
The novel follows her in her struggle to find her own style. How will she cope with an environment advertising originality and creativity as top cultural values? What is the role of Flowy, the mysterious parrot who communicates with her by recombining Picasso quotes and who is able to detect plagiarism (Figure 3)? Which path will she follow to find her own voice? In parallel to this story lies another story about how the story was designed, in which Max, and possibly other characters of the baseline story, play important roles.

Figure 2: Max, as a child, already copies famous painters' works

4 Links with AI

Following the tradition of reflexive systems in Artificial Intelligence, the graphic novel is about and it is written by Max herself. This narrative device enables the novel to tell two stories simultaneously: the baseline story, as well as the story of how the story was designed, to allow the reader to contemplate and reflect on the creative process.

Max Order's name itself is a reference to a typical AI problem [Papadoupoulos 2014] concerning automatic content generation. Indeed, many systems use Markov models to automatically generate finite-length sequences that "sound like" or "look like" the content of a training corpus; in this context, the order of the model, i.e. the length of contexts used to generate continuations, is traditionally used to control the degree of style imitation: a higher order creates better imitation. However, increasing the Markov order tends to replicate verbatim large "chunks" from the original corpus, producing a basic form of plagiarism. This research concept is mirrored by the main character's endeavour to create original visual artworks, which is constantly falling into plagiarism. This creative crisis will be solved with the help of one of the characters, Flowy the parrot, whose name refers to the seminal theory of the optimal creative status of Flow by [Csikszentmihalyi 1990].

Flowy symbolizes the role that AI can play in helping artists find their own style. Flowy acts as:

- A mirror which recombines and sends back to the artist a corpus of knowledge (in this case Picasso's quotes, which will help Max to develop her own style);
- An analysis tool which recognizes the authorship of graphic works and can tell Max when the artwork she produces are in a novel style;
- An "aiding tool" which suggests Max how to begin, continue or end a graphical piece.

3 The Flow Machines team

The story is created by Flow Machines, an ERC-funded project, leaded by François Pachet, which addresses the issue of enhancing individual creativity by looking at it through the concept of "reflexive interactions", human-machine interactions with a system that attempts to imitate the user's style [Ghedini et al., 2015].

Figure 3: Flowy the parrot is able to detect plagiarism

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Note: before publishing, the graphic novel will be on line at the address www.max-order.com

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