

New Challenges of Copyright Authorship in AI

C. Ruipérez¹, E. Gutiérrez¹, C. Puente², J. A. Olivas³

¹ Law & Economics Dpt. – TAI University of Arts,

Madrid, Spain, clara.ruiperez@escuela-tai.com, elisaggra@gmail.com

² Advanced Technical Faculty of Engineering – ICAI, Pontificia Comillas University,
Madrid, Spain, cristina.puente@comillas.edu

³ Information Technologies and Systems Dept., University of Castilla-La Mancha
Ciudad Real, Spain, jaolivas@uclm.es

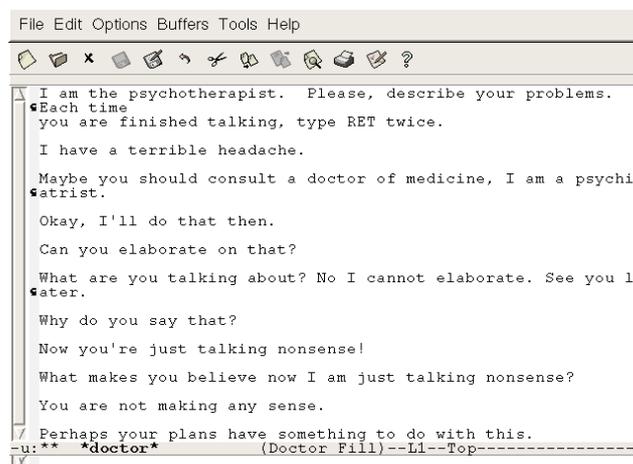
Abstract –*In this paper we explore the new challenges facing Artificial Intelligence with systems able to generate new creations such as poems, songs, pictures or news, and the ownership of their rights.*

Keywords: AI Copyright, .

1 Introduction

In 1948 Alan Turing, considered as the father of Artificial Intelligence, took a sabbatical year to write a manifesto about the intelligence of machines [1]. In fact he began with the sentence “*You cannot make a machine to think for you*”. This statement that seemed obvious at that time, is being more than questioned nowadays as we present in this paper.

As computers evolved through the ages, new ‘intelligent’ forms appeared. In the 60’s Joseph Weizenbaum created Eliza [2], a program able to emulate a computer therapist and able to maintain a simple conversation as figure 1 shows. In the future Eliza would be considered as the first chatbot, and would serve for inspiration for many others, as for example Iphone’s SIRI, Ikea’s Anna or Cleverbot [3].



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File Edit Options Buffers Tools Help
I am the psychotherapist. Please, describe your problems.
Each time
you are finished talking, type RET twice.
I have a terrible headache.
Maybe you should consult a doctor of medicine, I am a psychiatrist.
Okay, I'll do that then.
Can you elaborate on that?
What are you talking about? No I cannot elaborate. See you later.
Why do you say that?
Now you're just talking nonsense!
What makes you believe now I am just talking nonsense?
You are not making any sense.
/ Perhaps your plans have something to do with this.
u:** *doctor* (Doctor Fill)--LI--Top-----
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Fig. 1 Conversation with Eliza on Emacs.

During these years were established the theoretical fundamentals and principles that would serve as the basis of AI in the future, like neural networks by McCulloch and Pitts (1943) [6], fuzzy logic by Lotfi Zadeh (1965) [7], genetic algorithms by John Holland (1970’s) [8], among others.

During the 70’s, new types of ‘intelligent’ systems appeared as SHRLDU created by Terry Winograd [9]. This system provides an interface in natural language to interact with geometric figures and the movements that can play with them in a virtual environment. Other example is LUNAR [10], developed by William Woods which provided an interface in natural language capable of answering questions related to lunar rock samples. This is considered as the first Question Answering system.

During the 80's, Expert Systems were born. They supposed a step ahead in the field of AI as they deal with very specific knowledge emulating the view of an expert in a field, connecting the information through reasoning strategies of several stages. Two famous examples are Dendral [11] and MYCIN [12]. Dendral was created by Edward Feigenbaum, served for the study of chemical components. Written in LISP (a very used language in AI), it automated the decision making process and problem solving behaviour of organic chemists. In fact this expert system was used for more than 10 years and served as basis of many others like MYCIN, created by Edward Shortliffe, which was a medical expert system created to diagnose illness. Written in LISP as well, MYCIN had improvements in the reasoning stage and served as basis for many medical expert systems.

In the 90's, AI was introduced in our homes, with intelligent washing machines, cameras, phones, and a set of infinite devices. With the emerge of the Internet, AI is focused in the user needs, providing intelligent search engines like Google, recommendation systems as Amazon, translators as Babylon or Google Translator, sentiment analysis systems as those dedicated to understand 'user's comments in Twitter or social networks, and thousands of mobile apps dedicated to provide a service to a final user.