

Brief consideration of the phenomenon of humor in HCI

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This paper is a position paper discussing the topic of humor in Human Computer Interaction. Despite, being an important element of social life and having countless benefits such promoting likeability, improving team work, improving mood and health, helping with content retention etc. humor seems to be a rather marginal topic of interest in human computer interaction. The paper analyses the reasons of this apparent lack of interest, looks at usages examples and proposes some solutions to promote the interest on this particular topic in our community.

CCS Concepts: • **Human Computer Interaction**; • **User Interfaces**; • **User Experience**;

Additional Key Words and Phrases: Humor, Playfulness, User Satisfaction

ACM Reference Format:

Andreea I. Niculescu. 2021. Brief consideration of the phenomenon of humor in HCI. In *Yokohama '21: ACM Asian CHI Symposium May 07–08, 2021, Yokohama, Japan*. ACM, New York, NY, USA, 6 pages. <https://doi.org/xx.xxx/xxxxxx.xxxxxxx>

1 INTRODUCTION

Humor is powerful tool of communication that enhances interactions between people. It is consistently found in all cultures and comes from people of all ages and backgrounds [24]. A study conducted by researchers from University of Wolverhampton found the oldest joke¹ to be dated in 1900 BC [20]. However, it is likely, that humor has been around for much longer, probably for tens of thousands of years. Research on Australian aborigines - a genetically isolated population for at least past 35.000 years - found evidence of humorous conversations between clan members [18]. This demonstrates that humor has genetic roots and is probably as old as the human kind itself.

No one knows for sure why humans developed a sense of humor along their evolution, but scientists found links between humor and playfulness exhibited during mock aggression. Such behavior was usually characteristic in situations requiring conflict solving, tension calming [16] and cooperation between parties with laughter being an indication on the opponent's sympathy level [13].

Along the history, humor played an important role not only in human interpersonal relationships, but also in social and cultural life. Parodies, mockery in dialogues and satirical writings appear as early as 2nd millennium BC in the ancient Egypt [25]. Early records of ancient Greek texts contain references to joke books and stage jokers who could make a living as professional entertainers [3]. Comedy is in fact an art genre widely used as form of entertainment from the antique until modern times, from North American tribal clowns [18], Indonesian Wayankulit puppet shows [21], Arabic storyteller [7], Polynesian clowning traditions during weddings [11] to the classic stand-up comedy found in bars cafes around the world [28].

¹The joke content suggests toilet humor was a popular choice of entertainment back then, similar as it is today

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Manuscript submitted to ACM

Given its long history and string embedding in culture and social lives since early ages, humor has been extensively investigated by scientists from different disciplines, such as psychology, sociology, linguistics and anthropology. Their studies showed that humor had positive effects not only on increasing interpersonal likeability [15], enhancing teamwork, promoting content retention [29], but also more important, on improving emotional health, boosting immune system and relieving tension [9].

Similarly, humor is an established field in natural language processing (NLP) and artificial intelligence (AI) communities who focus on developing methods for automatic detection and generation of humor. In contrast, the interest on humor in the human computer interaction (HCI) community seems to be rather marginal. And this is surprising, given the benefits of humor on one side, and the main human centric focus of the field, on the other side.

Therefore, in this paper, we try to analyse the reasons for this apparent lack of interest, discuss few notable examples of humor used in interactive technologies and propose some solutions meant to promote research on humor in the HCI field.

2 CHALLENGES IN DESIGNING MACHINES WITH A SENSE OF HUMOR

Humor is a desirable characteristic in humans, therefore, designing machines with sense of humor could potentially bring similar benefits for the interaction effectiveness and overall user experience. However, practice showed that implementing humor in machines is a very challenging task for a number of reasons:

- First of all, humor is about appropriate timing. A joke has to be delivered at the right time and in appropriate context, otherwise it will fail to accomplish its goal of provoking laughter. Social norms and a common background are also required to reach the audience. However, social competence and emotional intelligence are hardly programmable skills for machines.
- Secondly, in the case of verbal interactions, humor relies heavily on natural language understanding and generation. Despite notable progress in the field (e.g. in the area of detection [5], [1], [17], [10], understanding [19], generation [22], appropriate delivery [6],[2]) humor implementations seem to be still in their infancy. For example, machines still struggle to understand and appropriately deploy irony and sarcasm, both of which are important constituents of humor.
- Thirdly, even though humor has genetic roots and is universal, what is considered funny can be relative: for example, a good French joke may raise eyebrows in Japan as a result of different cultural constraints. This is the reason why many jokes or humorous remarks go often unnoticed, misunderstood, or even worse, perceived as offensive. Teaching cultural appropriateness to machines is yet another hurdle.
- Fourthly, humor should be used sparsely. When a humor 'formula' is used in excess it becomes odd and it can even trigger negative effects as. Sensing when is the right time to stop, is a difficult task not only for machines, but also for certain humans.
- Fifthly, there are no standard ways of measuring sense of humor yet. This poses a great challenge for designer, as good design is bounded on iterative evaluation and corrective feedback.

3 HUMOR APPLICATIONS IN HCI

Even though humor seems to be neglected in our community, there were several attempts of embedding humor in technology. We will discuss a few implemented applications that had some notable success.

3.1 Humor and playfulness

Humor is said to be the skilful ability of the mind to be playful with thoughts[16]. And indeed, researchers found out that combining humor and playfulness can persuade people to change bad habits.

The 'fun theory' experiment started as initiative of the Volkswagen Group Sweden. It demonstrated that using fun and playfulness people's behaviors can be changed for the better. During their study, several playful devices were implemented and tested in the wild. For instance, an interactive piano stairs (see fig 1) was built on a subway station to encourage people to do more physical activity; an noise making garbage bin took people by surprise inviting them to throw garbage in bins; a playful recycling automaton managed to persuade by-passers to be mindful about recycling bottles. Empirical results of the experiment demonstrated that people are more willing to change their habits as a result of interacting with playful devices [8].

The fun theory became viral after was published in YouTube in 2010 and achieved more than 17 million views [23].



Fig. 1. Piano stairs on a Stockholm subway implemented as part of the fun theory experiment initiated by Volkswagen Group Sweden (<https://youtu.be/SByymar3bds>).

3.2 Humor and culture

Stand-up comedy could become a field where robots and virtual agents could in the future compete with humans.

Social roboticist, Heather Knight looked into ways of programming the humanoid DATA to perform stand-up comedy at a the well know TED conference as part of an international robot stand-up comedy tour.

The robot was equipped with sensors and algorithmic capabilities that enabled it to gathers audience feedback and tunes its behavior as the crowd responds. [14]

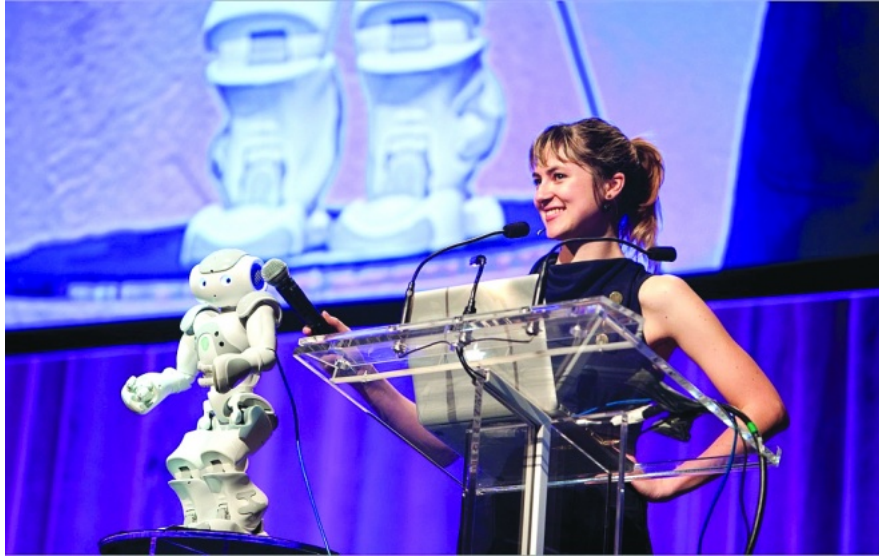


Fig. 2. DATA performing stand-up comedy at TED (https://youtu.be/Fu_kBW_KSms).

3.3 Humor and health

"One joke per day keeps the doctor away" says a popular book title. Interestingly, the ethnology of the word "humor" positions the word in close semantic relationship to the concept of health. The word originates from the Latin "umor" meaning liquid. In medieval medicine, a person was considered healthy if all four types of her body fluids (blood, phlegm, yellow bile and black bile) were in balance: too much blood would make a person over-excited, too much phlegm would trigger sluggishness and phlegmatic behaviour, too much of yellow bile would make the person irritable while too much of black bile would push her into melancholy and depression. As such, only when all fluids were in balance people were deemed to be healthy and in good "humour" [16]. What at the first glance seems to be a semantic association by chance, proved to have a scientific base: trends in humour research find increasingly more links between humour and health in a multitude of study in cross - cultural communication, psychotherapy and clinical research. Humour seems to have benefit effects on simulating the heart, lowering blood pressure and relieving stress. Children hospitals notoriously hire clowns as they have a relaxing and comfort effects on sick children [18].

An interesting study deployed a healthcare robot in to interact with patients waiting for a flu vaccinations. The study showed that people had an increase positive user experience at vaccination center as compared with a control group [28]

4 SOLUTION TO THE CURRENT PROBLEM

While implementing machines with sense of humor remains challenging, there are ways to encourage researchers to work in this area.

An efficient way of drawing attention on the topic of humor is organizing workshops and symposia. Apart from general conferences on humor studies, such as the Conference of the International Society for Humor Studies [4] held yearly since 1982, there is a need of having dedicated venues for research studies on humor in interaction with

machines. There have been some initiatives in the past, such as HUMIC workshop [26] organized at INTERACT 2017 and HUMIC-DIAL [27] organized yearly in conjunction with at IWSDS [12]. However, more such initiatives are needed in the future.

Another important factor is collecting data on humor interaction. There are currently not enough datasets available and no standard annotation sets. This is major drawback that prevents humor research to reach further stages.

Last but not least, strengthening the links between adjacent research communities to work together and share synergies would probably help overcoming current shortcomings.

5 CONCLUSIONS

Implementing machines with sense of humour is a challenging task. The fact that a simple joke makes simultaneously use of social perception, cultural awareness, language skills, abstract thinking, symbolism and theory of the mind demonstrates that humour is perhaps the most complex form of communication humankind may have [16].

But despite challenges, studying humor and finding solutions on how to use it properly when designing interactions with machines might bring unexpected rewards. After all, humor's benefits found in human interactions are likely to be transposed in human computer interactions using a similarity principle. By strengthening the research communities and working together, we are bound to succeed in creating machines with a sense of humor in the near future.

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