

Humor Facilitation in Smart Workplaces

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Abstract. We become nodes in the Internet of Things (IoT), not only because we are monitored and our actions can be predicted and understood, but also because sensors and actuators attached to our body or in our body make us a ‘living’ sensor and actuator, and an active node in the IoT. Also, digital technology amplifies our intelligence and our sensorial capabilities. With this background (smart environments, the IoT, and our amplified intelligence and senses), in this paper we explore humor as it can appear in digitally enhanced physical worlds, with a focus on humor in smart workplaces.

Keywords. Humor · Workplace · Incongruity humor · Functional humor · Subversive humor · Digital technology · Smart environments · Internet of Things · Trolling · Hacking · Virtual agents · Social robots

1 Introduction

Humor is the ‘object’ of an emotion that has been called ‘comic amusement’ [3]. How does that object occur or how can it be created? We make a distinction between accidental humor, spontaneous humor and designed humor. Accidental humor does not necessarily require human decision-making. Spontaneous humor, despite its name, is made on purpose, and there usually is some reflection on whether it is appropriate to construct and use this humor, for example in a conversation. Designed humor requires planning in advance. In Figure 1 we display this humor continuum from accidental to designed humor.

Humor Continuum



Fig. 1. The Humor Continuum: From accidental to planned humor

There will be opportunities to play and introduce humorous events when all our daily living and working environments have sensors, actuators and computing devices embedded. When humans have access to sensors and actuators in their living and work environment, their community, or their city, they can configure them on the fly to introduce a spontaneous, unexpected and potentially humorous event, just as they can compose a verbal humoristic remark using words, gestures and prosody. Context-aware social robots can ‘spontaneously’ compose humorous remarks or perform humorous actions while interacting with their users [11,22].

Whether in urban, workplace or domestic environments, during conversations, work-related or recreational activities, we can ask the question how smart technology can increase the chance of accidental humor to appear, how it can be invoked to create humorous events on the fly, or how it can be employed to design environments that offer humorous interactions. In this position paper we investigate the various ways humor can occur in smart workplaces. That is, workplaces that have embedded smart technology (sensors and actuators), necessary for the work that has to be performed. Other digital technology can also be present: PCs, tablets, screens, smartphones, office devices, robots, et cetera. Such digital technology can also be made available by the management for recreational purposes.

2 Digital Humor in the Smart Workplace

2.1 Humor in the Workplace

Humor can have various functions. We can have a good time telling jokes or funny stories among friends, make witty remarks in a conversation or make plans to trick someone. This aspect can be called ‘good-natured’ humor. The *superiority* theory of humor often explains our amusement or laughter in these situations because these activities make us feel ‘superior’ to others. The *relief* theory explains that humor can reduce stress. In humorous acts, whether they are verbal, non-verbal or physical, an *incongruity* is usually the core of the

‘object’ that provides us with comic amusement. Humor theories usually elaborate these superiority, relief, and incongruity views of humor [19].

Humor appears in our daily life. Our daily life will take place in smart environments. Thus, we are interested in what role smart technology can play in our humorous experiences in smart environments. For the purpose of this paper, we consider humor in the smart workplace. We can also distinguish in the workplace superiority, relief, and incongruity views on humor.

In research, it has been shown that humor plays a positive role in many professional situations, particularly in education, meetings, healthcare, and workplaces, where smart technology will be introduced or is already present. In the workplace, the role of humor can be ‘reinforcing’, meaning that it supports group cohesion and consolidates social order. In [23], humor in organizations and the workplace is discussed. It is mentioned that humor receives little attention in research. Moreover, humor is usually discussed from the point of view of how it can serve the purpose of the organization. Humor is seen to be a managerial tool to improve task and group performance. Clearly, humor can have general benefits, such as health and well-being, but there are also benefits that are more specific to an organization, such as the role of humor in social relationships, facilitating group cohesion, facilitating interaction, alleviating stress and helping to cope with unexpected and unwanted events. Focusing on these roles of humor in organizations and workplaces is the functionalist view of humor. In this view, the question is how humor can be organized, manipulated or stimulated to obtain such desirable benefits for the organization.

This functionalist view provides a limited perspective on humor as it appears in organizations. For example, it does not take into account the subversive and resistive potential of humor, that is, humor that challenges the status quo, exposes absurdities or signals dissatisfaction [23]. In [7] it is mentioned that in the organizations these researchers investigated, more than forty percent of humor at the workplace was ‘subversive’.

In [17,18] the authors investigated the role of humor in workplaces, particularly organizations addressing information and communication technology, and found various types of humor, such as verbal humor, particularly banter and canned jokes; humor on display, that is, printed and email humor, including images; and physical humor, which includes practical jokes and horseplay. Banter is the most prevalent form of humor in these organizations. Usually, teams of employees develop their own culture of playful banter and humorous insults. Trash-talking and creative insults can be humorous and acceptable in the company of colleagues and friends. It can,

however, become uncomfortable, contain cruelty, be hurtful and abusive and even turn into harassment. Obviously, the same can happen with ‘humor on display’, particularly with all the possibilities to alter (‘photoshop’) digital images and texts or even introduce animations and to put them on social media and smart phones. Verbal banter then can turn into multimedia banter.

A general observation [26] on humor in organizations is that any organization has rules about relationships, authority, routines and efficiency. That is, there is some bureaucratic administration, a formalization of interactions and behavior that stands in contrast to our more natural behavior out of workplace or office hours. In [2, 14], it is mentioned that this contrast between this formal rule-based behavior (in Bergson's terminology, a mechanical view on behavior [2]) and natural, spontaneous human behavior can be a natural source of incongruity humor. Humor can result when someone intentionally or accidentally displays actions that are at odds with bureaucratically expected, wanted or desirable behavior.



Fig. 2. Playground equipment at Google offices

2.2 Fun Management and Digital Technologies in the Workplace

Some corporations have introduced fun management. They hire humor consultants (‘funsultants’), introduce ‘humor task forces’ or ‘joy committees’, organize fun programs such as ‘fancy dress days’ and create ‘humor rooms’ with physical play and game facilities [10] for their employees (see Figure 2).

The assumption is that in addition to some of the aspects mentioned above (for example, stress alleviation or facilitating group cohesion) humorous activities increase the positive mood of employees and that, depending on the kind of organization, this will lead to more friendly contacts with customers and improve creativity inside the organization. Clearly, a more global goal is to use humor in the organization to increase productivity.

Digital technology does not yet play a role in examples of fun management, perhaps with the exception of providing employees with video games. Fun and

humor are to be consumed in a prescribed way, and there is no encouragement for a more pro-active attitude of employees to be playful or generate humor in the workplace. A nice example of prescribed humor that was not appreciated by employees can be found in [21]. A set of funny looking human-sized ‘Russian dolls’ was introduced in the reception area of a company. The employees, not happy with the company’s policies, did not appreciate the fun that had been envisaged by the management. Instead, they started ‘playing’ with the dolls in a way they enjoyed, such as putting them in the ladies’ toilet, in the elevator, or punching them in the face (leaving an indented fist mark). The management installed CCTV cameras to prevent such playful behavior (or rather, resistive humor) by its employees. In this case, the digital technology (CCTV cameras) was meant to prevent unmanaged fun.

In the common view of pervasive computing and Internet of Things technology, we have sensors and actuators everywhere in our daily life environments, including our home, office and workplace environments. This pervasiveness means that future organizational and workplace humor needs to be investigated from the viewpoint of available sensor and actuator technology and its accessibility. What role can be played by digital technology in the functionalist point of view or in subversive and resistive humor? The organization can make decisions about the introduction of digital technology that is meant to support the functionalist view of humor. This technology is then added to the already existing range of sensors and actuators that are embedded in the workplace, namely, in PCs, laptops, tablets and wearables (such as smart phones, smart watches, smart textile) or that are embedded in equipment and machinery already present in the office or production environment.

Various examples of humorous digital technologies that can be included in a workplace are mentioned in [1]. They range from joke-telling robots, humorous office messages and memes, to playful devices as illustrated in Figure 2. In this paper the three humor viewpoints (incongruity, superiority and relief) are used to make some observations on issues that need to be taken into consideration when an organization decides to introduce humorous and playful elements in a workplace. Hence, is there a specific reason for why a particular kind of humor at a particular time and in a certain period is introduced? What will be the effect of introducing incongruities in the workplace to visitors or customers? And will the humor that is introduced be probably ‘misused’ and become part of unwanted subversive humor? Concerning the latter, introducing humor to let off steam by frustrated or dissatisfied workers fits within a functionalist view on the use of humor,

especially when it contains some kind of self-deprecation toward the organization. This functionalist viewpoint does not take into account spontaneous humor made possible by digital technology or accidental humor caused by digital technology. Rather, the viewpoints introduced in [1] assume that humor helps increase engagement and happiness and, therefore, indirectly, productivity.

In addition to the designed playfulness and humor that has been introduced by the organization, there is the possibility that employees with access to sensors and actuators or using their own digital devices may design alternative playfulness and humor or use the available technology to introduce humorous events during their work activities. There can be designed and spontaneously created incongruities. A digitally enhanced physical environment can be explored in search for incongruities. Memes [9] are among the easiest ways to create humor. Company-related memes can be distributed using social media as well as specific ways of distributing company information. Employees can horse around with their creativity and their happiness or vent their frustrations by creating memes to share with their colleagues. These memes can contain critical comments on what is happening inside a company and a company's policies and can take the form of subversive humor. Rather than having memes that combine pictures with text - the usual form of memes - we can ask whether it will be possible to have digital memes whereby, instead of having a multimedia display (text, image, sound), there is a display that involves changes in a physical environment. As mentioned by Daniel Dennett [4], going back to the original definition of memes by Richard Dawkins [5], "Memes are ways, ways of doing something, or making something, ...". In a workplace configurations or manipulation of objects and handling of devices can display particular messages, for example making someone or a workplace policy ridiculous and then become part of a workplace culture. This can also happen when workers know how to manipulate (or find ways to cheat) sensors and actuators in their environment and have it spread and replicated in a humorous way in their organization.

Incongruities can also emerge because of the behavior of workers who are not yet familiar with the technology and are not fully aware of the consequences of their behavior in smart environments. More experienced workers can exploit this lack of knowledge to introduce humorous situations. Disruptive humor can also make use of available digital technology, for example, the creative re-use or misuse of bugs. In that way the technology is explored in ways that had never been intended by the designers.

In [15], we discussed ‘mischief humor’, whereby the assumption was that this kind of humor that is present in video games and social media will also appear in smart physical environments. Mischief humor is humor that follows from looking for and exploiting bugs, behaving in unexpected and maybe inappropriate ways, thwarting, harassing, upsetting and provoking others, disrupting activities, cheating, and posting inflammatory comments. Clearly, such humor can also appear in smart workplaces. Trolling (for example, using someone’s identity), griefing (for example, continuously disrupting someone’s digital activity) or hacking (for example, acting as someone else) can occur in smart workplaces. They can give rise to humorous situations where, of course, there can be disagreement between the hacker and the owner of the identity and his or her information about what is humorous. Mischief humor certainly does not fit in the functionalist view. It can challenge the status quo, for example, when the digital technology is used to display weaknesses, absurdities or inconsistencies in the organization. Hence, it can be subversive and we can investigate how digital technology can facilitate subversive humor. However, mischief humor is usually directed toward a particular person or group and not toward the organization.

Controlling sensors and actuators helps to create digital pranks, usually planned and therefore designed humor, although there may be situations where it can be done spontaneously. Digital pranks have been around since the introduction of workstations and the PC. Some pranks that can be played when one has access to someone else's computing device are discussed in [16]. Internet-connected PCs, workstations or ‘things’ allow remote access and the playing of digital pranks. Hence, ‘our’ workplace is accessible to others, others may have the same rights to use it [20] as we have, and our workplace may not be at one particular physical location anymore. This scenario increases the possibility of facing unexpected situations or introducing unexpected situations for co-workers. Clearly, hoaxes can also be introduced but these are more serious deceptions, rather than humor.

2.3 Humorous Workplace Interaction with Virtual Agents and Social Robots

Computing devices, sensors, and actuators can be the cause of humor, can be used to create humor, or can make decisions about humor themselves. But we still need to introduce another viewpoint on having humor in smart environments, including workplaces. In our smart environments, we can have virtual agents or avatars appear on displays to assist workers with their

activities by, for example, explaining, demonstrating and monitoring maintenance or repair, or by playing the role of a receptionist, fitness trainer or a friendly company representative who reminds you about company objectives, successes and tasks that are waiting. These virtual agents are human-like characters that know about the company, know about activities, know about particular tasks and, in short, can act as a human person with a particular task in the company. As said, they can appear on displays, whether it be a screen that welcomes visitors, a display that supports a particular workplace activity, or the screen of a smartphone that has company and work-related applications. We can also think of augmented reality applications where we can communicate with a virtual character that is projected onto our view of the physical workplace. This, however, requires the use of a (usually head-mounted) device that lets us see the virtual and the real at the same time.

Hence, we can have virtual humans that can be considered as colleagues in our workplace. They have tasks different from ours, or they are there to support us in our tasks. But we can also have physical human-like robots that perform useful tasks in our work environment and with which we have to cooperate, as with human colleagues. Unlike virtual agents that are displayed on a screen or are part of a virtual world, robots have a physical representation and can move in a physical environment. Humanoid robots can display nonverbal interaction cues, both in body language and in facial expressions. A physical robot can move around, gather information about its environment and its conversational partners, and use information about its physical context in generating humorous remarks or (potentially) humorous situations. Such a robot is part of the ‘things’ that are included in the IoT, and human-like behavior is expected, including having a sense of humor.

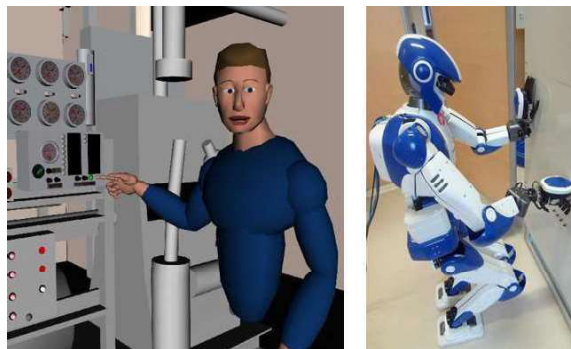


Fig. 3. Collaborating with humanoid colleagues

We need to ask how virtual agents and human-like robots can actively take part in creating humor, initiate the creation of humor, become the butt of jokes, or be hacked or otherwise misused to create humor. These are areas of research that have hardly been investigated. Developing virtual agents is usually about conversational agents that have knowledge about human-human interaction, and research aims at designing models of face-to-face human-human interaction (conversational interaction, management of dialogue, natural language processing) and then using these models to have a virtual agent display natural, human-like behavior. We can have these virtual agents as conversational partners [13], but it is also possible that they can move around in virtual or augmented reality environments. An example of this is Steve [8], a virtual agent that is meant to train Navy personnel to operate engines aboard their ships (Figure 3, left). Examples of collaboration with human-like robots can be found in [25], where a robot acts as a camera man recording a bicycle repair session, or the humanoid robots (Figure 3, right) that are developed in a joint French-Japanese research project and that will be deployed with human colleagues in airplane assembly lines. Presently, in some Chinese restaurants, there are waiter robots serving food. The Henn-na Hotel in Nagasaki, Japan, aims at having 90% of the staff being robotic. Such robots can take care of check-in and bring your luggage to your room. Not everyone is enthusiastic about the service that is provided.

The use of humor by virtual agents and robots while interacting with their human partners has been investigated. Usually, this research is about joke telling during conversational human-agent or conversational human-robot interaction. Either the agent or robot tells a joke and the accompanying non-verbal behavior (non-verbal speech, gestures, facial expressions) is modeled, or the nonverbal behavior of a listener is modeled in a virtual agent or robot, including smiling and laughing. Laugh-aware virtual agents are discussed in [12] and laughing agents in [6]. Robots that use humor are discussed in [11,12,23,25].

As mentioned earlier, humor and laughter are usually considered in social and conversational settings only. But, of course, social and conversational settings also appear in workplaces. In addition, we can have employees make jokes about clumsy and non-intelligent behavior of agents and robots or make them part of their subversive humor, similar to what happened with the earlier-mentioned Russian dolls.

3 Conclusions

In this paper, we surveyed how humor can appear in smart environments, particularly in smart workplaces, and how such appearances can be stimulated and facilitated by available smart technology. Humor can appear accidentally, spontaneously, or be planned. As discussed, humor has different functions. When planned humor or playfulness is introduced by the management it is usually hoped that it helps to increase motivation, creativity and productivity. This functionalist way may also include the support of group cohesion, establish connections and facilitate good working relations among employees. Workers can also use smart technology in their digitally enhanced workplaces to introduce incongruent and surprising situations with the aim to create humor, whether it is done spontaneously or planned. This aim can be achieved if they have access to sensors and actuators and we can configure them in such a way that surprising and humorous situations appear. Rather than humorous situations, we can also mention the creation of *potentially* humorous situations that can be made humorous by human intervention or that can be made humorous by the comments of a human observer or participant. Social media can also be used for workplace humor. Virtual agents or humanoid robots that perform particular tasks in the organization can become colleagues, but their limited intelligence and their far-from-perfect simulation of human behavior can make them the butt of jokes and the object of subversive humor. Humor research has not yet given us models of humor. For that reason, we cannot expect that the ‘smartness’ in smart environments can be employed to automatically generate humorous situations. A sense for introducing surprise rather than having a sense of humor seems to be possible for smart environments, virtual agents and humanoid robots. Taking advantage of surprising situations in order to introduce humor requires some cooperation between humans and digital technology.

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