Self-initiated humour protocols:
An algorithmic approach for learning to laugh

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Abstract

We introduce the new concept of self-initiated humour protocols as a new and algorithmic approach for learning to laugh and develop a sense of humour. This approach synthesises the two paradigms of spontaneous humorous laughter and intentional humourless laughter in that the protocols are both humorous and intentional. These protocols have been logically designed using five main theories of laughter. They can thus be used in the non-clinical and subclinical population to raise positive affects and well-being and to enhance resilience against stress and adversity in life. It is proposed that these protocols can be integrated to the end of any successful psychotherapy to further alleviate symptoms, create psychological strength and thus avert any relapse to mental illness.

1   Introduction

Non-hostile humour and laughter have been called the best medicine for physical health (Miller & Fry, 2009; Martin & Ford, 2018) as well as for well-being in general with wide therapeutic benefits in mental health (Yim, 2016; Martin & Ford, 2018). The significance of laughter in relation to happiness has been summarised in William James's well-known quotation: "We don't laugh because we're happy - we're happy because we laugh."

Duchenne laughter (Martin & Ford, 2018), in which muscles around the corners of mouth and eyes are contracted, reflects genuine, spontaneous mirth and amusement and triggers the release of endorphins in the body, which can positively impact on our pain threshold and tolerance.

However, for centuries, humour and laughter have been interpreted differently by several prominent philosophers and psychologists (Morreall, 2011).

1.1   Theories of laughter

There have been three old theories about laughter and humour (Morreall, 2011, 2012):

(1) The superiority theory due initially to Plato and Hobbes: we laugh with sudden glory when we ridicule, mock or look down on someone, or simply when we see ourselves as superior to someone.

(2) The incongruity theory due initially to Kant and Schopenhauer: we laugh when something non-serious violates our common belief, e.g., when the punchline of a joke violates our expectation built earlier in the joke.

(3) The relief theory due to Spencer and Freud: laughter is caused by the release of accumulated nervous energy, like sexual or political jokes when the subject matter is repressed or forbidden.

The above theories do have overlaps in the sense that some humour can be explained by not just one theory but two of the above theories. However, each corresponds to a well-defined family of humour which we will refer to in the following.

We can also include a more contemporary rationale for laughter due to Charlie Chaplin who was a pioneer in modern comedy. We call it the perspective theory of laughter and it is epitomised in this quotation:

(4) The perspective theory: "Life is a tragedy when seen in close-up, but a comedy in long-shot." Chaplin.

Chaplin provides a method how this is accomplished by which he introduced the concept of play in laughter. His recipe: "To truly laugh, you must be able to take your pain, and play with it!".

In fact, the first three humour theories do not account for all cases of laughter. It is found that in more than 80% of all occurrences of laughter there are no humorous contexts. People can laugh socially with no accompanying humour, for example when someone says: "John is here", or simply "How are you?". A more recent theory of laughter can shed light on these cases of laughter as a play signal generalising Chaplin's argument:

(5) The evolutionary or playful theory (Martin & Ford, 2018): laughter developed as a play signal in higher primates in their mock fights to indicate non-aggressive intent.

The evolutionary theory is corroborated for human beings in everyday life at any playground, park or school yard where children laugh while playing with other children. As children grow up and take part in competitive sports and games, however, the emphasis quickly shifts from play to achievement and winning, which reaches its extreme form in elite sport performers who can suffer from depressive symptoms (Newman, Howells, & Fletcher, 2016). More generally, although play and thus laughter is initially the basis of learning for children, its role in learning is later sharply diminished in the competitive and achievement oriented educational system.

There is still, however, no consensus in the scientific community on answers to very simple questions such as what is the essence of humour or what makes us laugh (Morreall, 2011). Morreall, a well-known contemporary philosopher of laughter, makes a key argument in his book on the role of laughter in human behaviour: while negative emotions such as fear, sadness, disgust and anger can be, and usually are, the first natural reaction to an upsetting event, in a mature approach to life these emotions are contained and replaced by a cognitive understanding of the upset which he calls reality assimilation. He then goes on to say, as Chaplin's

quotation above suggests, that ultimately one should laugh the upset off, which is considered the optimal final act.

It follows, by this argument which is in line with Chaplin's perspective theory, that we can learn to understand the roots of our upsets and then, or eventually, laugh off our negative emotions. This journey can take some time and there are wide individual variations how quickly individuals succeed to cope with disturbing events and creatively interpret them humorously to trigger laughter.

2 Humour and mental health

In (Martin, Puhlik-Doris, Larsen, Gray, & Weir, 2003), four different styles of humour have been classified: (i) affiliative humour style which uses humour to achieve interpersonal reward aiming to enhance social relationship, (ii) self-enhancing humour style which uses humour to achieve intrapersonal reward aiming to maintain positive well being, (iii) aggressive humour style which uses humour to enhance oneself at the expense of another, and (iv) self-disparaging humour style which engages in excessive self-disparaging humour. The first two styles (i) and (ii) are adaptive and non-hostile while the last two (iii) and (iv) are maladaptive and hostile. The Humor Styles questionnaire has been developed by Martin and his students to measure individual differences in humour.

The types of humorous material that make people laugh essentially depends on their past experiences rather than their genetic makeup (Martin & Ford, 2018). In particular, there is evidence that family environment contributes in two different ways to children developing a sense of humour: On the one hand, based on the *modeling/reinforcement hypothesis*, parents who use humour to laugh and enjoy themselves reinforce their children's initiation of a sense of humour. On the other hand, in the *stress and coping mechanism*, children from uncongenial family environment develop an aggressive sense of humour to cope with their anxiety, anger and stresses (Martin & Ford, 2018).

The impact of humour in psychotherapy has been reviewed extensively in (Martin & Ford, 2018). Albert Ellis, who pioneered Rational Emotive Therapy, has strongly recommended the use of humour in psychotherapy to weaken and debunk deep irrational beliefs that are at the root of psychopathology (Ellis, 1977). The UK's National Health Service is now preparing for laughter courses to help traumatised patients, as reported in the Guardian on 04/01/2022.

2.1 Current laughter interventions

There are two basic paradigms of laughter to consider for our purpose:

(a) Spontaneous or genuine, humour based laughter, also called Duchenne laughter (after the French neurologist who discovered it in the 19th century) and

(b) Self-simulated or intentional laughter with no specific reason, purpose or context and thus not induced by any humour.

Given the widely accepted fact that laughter has a positive role to play in mental health, two types of laughter therapy have correspondingly emerged in the past two decades:

(a) humour-based, i.e., spontaneous laughter therapy, and,

(b) laughter yoga which advocates self-simulated, i.e., intentional laughter.

Both these interventions are usually practiced in groups, since we laugh thirty times more with others than individually with ourselves, and, as we all have experienced, laughter is contagious.

A 2019 systematic review and meta-analysis of studies based on these two types of laughter-inducing therapies for different populations and outcomes has four main conclusions:

- Overall low "quality of evidence".

- "non-humorous laughter attains higher effect sizes than humorous laughter".

- "Laughter-inducing therapies may improve depression, anxiety, and perceived stress."

- "Therapies seem feasible in terminal, immobile or cognitive impaired conditions."

The authors conclude that "Laughter-inducing therapies show a promise as an addition to main therapies, but more methodologically rigorous research is needed to provide evidence for this promise."

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2.2 AI and humour

From an AI perspective, although there has been some incremental progress in developing AI driven machines that can generate and detect humour, their performance remains poor. In fact, humour has been dubbed as AI-complete, implying that a machine capable of generating and detecting human-like humour would represent an artificial general intelligence, i.e., able to perform any intellectual task humans can undertake (Hurley, Dennett, Adams Jr, & Adams, 2011)

3 Self-initiated humour

We have developed a new approach for learning to laugh and develop a sense of humour that as part of the self-attachment technique in algorithmic human development. It is based on the four hypotheses:

- Humans have the capacity to use any non-threatening context or thought to become playful and thus laugh.

- Our actual ability to be playful, humorous and to laugh, at any stage of our life, essentially depends on our family, life and cultural background.

- No matter what background we have had we can always learn gradually to switch to a playful mode and laugh in our full capacity, much like the way we learn a new game.
- Learning to laugh at ourselves, including at our errors, misfortunes, setbacks and tragedies leads to high levels of social and emotional intelligence and creativity.
- An essential rule to facilitate humour is to understand why and in what context we laugh. And then formulate the various reasons we can find to laugh in nearly all contexts

To this end, we have introduced and developed the concept of self-initiated humour protocols for learning to laugh. It synthesises the spontaneous/humorous paradigm with the intentional/self-induced paradigm. Self-initiated humour protocols, as the name suggests, are therefore both humorous and intentional. They provide an algorithmic framework for laughing. The protocols are based on the five logical theories or rationales for laughter enumerated as (1)-(5) above.

There are two basic ideas about self-initiated humour. First, as the name suggests, in this method the focus of the humorous context lies mostly in the self—in one's beliefs, thoughts, behaviour, errors, problems, misfortunes— rather than simply and principally in the outer world. This implies that in principle everyone including those with symptoms of depression and anxiety who are not usually amused by generic humour can start to learn the method since it does not depend on a humorous context outside the self.

Second, a key pillar of the method is to practice being playful, much like how we were in our childhood, by becoming more flexible in our thinking and by relaxing our muscles including facial muscles around the mouth. The playful mode allows us to experience multiple occasions every day when we can take life not over-seriously even if the context is serious. If we can amuse ourselves even if the situation is serious, we enhance our positive affects which leads to better memory (Yang, Yang, & Isen, 2013) and thus better cognitive capacity to address the problems raised for us in the context. It is in this playful mode that one can practice the self-initiated humour protocols, which follow the families of humour in (1), (2), (4) or (5).

3.1   The twelve self-initiated humour exercises

We now enumerate the set of exercises for self-initiated humour. The first two are mental and muscular exercises to prepare our body to be in a playful mode. The rest provide context and trigger for non-hostile Duchenne laughter. These exercises are to be practiced initially on our own rather than with others. If in our laughter we sense any contempt against ourselves or others, we need to practice neutralising the contempt and converting it into surprise or simple amusement and thus to non-hostile laughter. This would enable us to have health benefits from our laughter.

(i) **Playful mind.** Our sub-optimal habits can cause inflexibility and rigidity in our mind, which is a potential barrier against a spontaneous and playful attitude in life, a crucial condition for being humorous. In this exercise, using the evolutionary theory (5), we practice being more flexible and playful about our beliefs and thoughts. For example, if we firmly follow a political, ideological, religious, or cultural orientation, we may investigate and try

to comprehend some of the counter positions to it. We can also exaggerate some of our beliefs to the extent that they sound absurd and thus funny. This does not mean that we necessarily abandon our position but it allows our mind to be a platform for a fluid, constructive and playful discussion between seemingly opposite or different perspectives. We also try to interpret events in the outside world playfully by rising above the fray in binary and opposing viewpoints for example in political debates as in the UK's House of Commons.

(ii) **Playful face.** Rigidity in thoughts and beliefs can also create rigidity in body and facial muscles specifically muscles round the mouth and eyes. In this exercise, in line with (5), we try to become playful and, to this end, loosen up muscles around mouth and eyes by moving them around and by singing our favourite songs to simulate and encourage spontaneity. Duchenne laughter is characterised by loose and half-open mouth and contracting muscles around the eyes, which this exercise helps to create.

(iii) **Self-glory.** In this exercise, we learn to laugh on our own over very simple things like our daily routine. On completing any mundane task, such as dish washing or shopping which we may even find boring, give yourself a smile/laugh as a victory gesture to congratulate yourself. In line with the incongruity theory of laughter, we can see a priori, before actually exercising this protocol, why it is actually funny: it violates our expectation as one does not congratulate oneself for such routine and mundane tasks. This a priori humour starts off the protocol once we spontaneously remember to switch to the playful mode. In a sense, we are laughing at the protocol itself. On the other hand, a posteriori after the act of smile and laughter, we can laugh at ourselves because, in line with the superiority theory (1), we have excelled our own former self: previously we completed this task without any accompanying positive affect but now we have done it with a joyful feeling and sudden glory.

(iv) **Incongruous world.** Any discordance, incompatibility or incongruity as well as anything perceived as unusual or extreme in the world that is not immediately threatening can be the context and trigger for Duchenne laughter. The same is true for any change in the outside world, e.g., behaviour of someone or course of events, that we perceive as significant. In this exercise, we practice being cognisant of any contrast, incongruity, inconsistency, or discrepancy in the world and use them, by the incongruity theory (2), as an underlying reason to smile or laugh. As we learn to laugh at contrasts that we recognise and discover in this way, the superiority theory (1) gives us ground for further laughing as we have indeed surpassed our usual and less humorous attitude in life.

(v) **Incongruous self.** In this exercise the context for humour is any incongruity in our own life, mind and behaviour, such as our own contradictions, conflicts, change of attitudes, thoughts, assumptions, expectations. Every individual is full of such inconsistencies. We practice being cognisant of any contrast, incongruity or discrepancy in our own world and use them, by the incongruity theory (2), as an underlying reason to smile or laugh. Again, as we laugh at such disparities that we recognise and discover in this way, the superiority theory (1) gives us ground for further laughing as we have indeed surpassed our usual and less humorous attitude in life.

(vi) **Self/world incongruity.** In this exercise the context for humour is the incongruity between the hard reality of the external world and our personal expectations. A common example is the recognition of any sharp or wide difference between our expectation of someone or something and the reality of the matter as it stands or as it unfolds. In this exercise, we practice being cognisant of any contrast between reality and our expectation and use it, by the incongruity theory (2), as an underlying reason to smile or laugh. Once again, as we learn to laugh at contrasts between reality and our expectation, the superiority theory gives us ground for further laughing as we have indeed surpassed our usual and less humorous attitude in life.

(vii) **Contrasting views.** In this exercise, we stare at the gestalt vase below until our perception changes and we see two white faces looking at each other. In line with the incongruity theory (2) and the evolutionary theory (5), we smile or laugh when this change of perception takes place, confirming that we can amusingly and laughingly switch our interpretation even if the object of our view remains the same. Similarly, we stare at the two while faces until our perception changes and we perceive the gestalt vase, at which point we smile or laugh.

(viii) (**Our own laughter brand.** In this exercise, in line with evolutionary theory (5), we practice playfully creating our own form of laughter which will have our own signature. Moreover, we design our brand in such a way that it uses a minimum amount of our energy so that it can be used for a long period of time or employed for many times repeatedly. With muscles around the mouth loosened and mouth open, we repeat one of the following repetitions phrases (using a vowel like "a", "e", "o") while turning it into laughter as you look into a mirror:

ah, ah, ah, ah, . . .
eh, eh, eh, eh, . . .
oh, oh, oh, oh, . . .
ih, ih, ih, ih, ih, . . .
uh, uh, uh, uh, ...

This exercise is a priori funny and amusing by the incongruity theory (2) as we do not expect ourselves to create a new form of laughter. Having practised the exercise, we can laugh by the superiority theory (1). Once we habituate ourselves with our own new form of laughter, we are encouraged to find humour in new contexts and respond to it with this self-created form of laughter.

(ix) **Feigning laughter.** We swim or run as a physical exercise not to get from one place to another, but because these exercises keep us physically healthy. Similarly, to keep our spirits high, we can learn to laugh as a mental exercise without any accompanying humour. It is known that feigning Duchenne laughter, as practiced in laughter yoga, brings similar physiological benefits as genuine humour-based Duchenne laughter. In self-initiated humour laughter, however, we consider feigning Duchenne laughter as funny in itself since, by the incongruity theory of laughter (2), we do not expect anyone to systematically fake laughter. The exercise is also a posteriori funny by the superiority theory.

(x) **Self-laughter.** In this exercise, in line with the evolutionary theory (4), we learn to become playful and laugh at our own everyday errors, lapses, blunders, flaws, glitches, miscalculations, mismanagements and other faults. While at first, we may feel upset about these minor issues, we practice to interpret them differently and try to quickly laugh them off by the incongruity theory (2), since we do not expect these faults to occur, as well as the playful theory (4). This exercise too is a posteriori funny by the superiority theory (4).

(xi) **Laughing at misfortunes and disturbing circumstances.** In this exercise, which has a longer description than the previous ones, we learn to laugh at our misfortunes, tragedies, setbacks, rejections, failures and disasters as well as at disturbing events and circumstances in line with (4). The objective is to be able to turn negative emotions like sadness, anger, fear and disgust to laughter. We start by trying to reinterpret these events and circumstances and identify any positive effect they had in our lives. At the very least we managed to survive them and since "What does not kill you makes you stronger" (Nietzsche), they may have resulted in some gain for us. By looking at them from a different cognitive perspective, we would prepare the ground for exercising this protocol.

Next, we consider the following shocking paragraph in Nietzsche's writings: "To those human beings who are of any concern to me I wish suffering, desolation, sickness, ill-treatment, indignities—I wish that they should not remain unfamiliar with profound self-contempt, the torture of self-mistrust, the wretchedness of the vanquished: I have no pity for them, because I wish them the only thing that can prove today whether one is worth anything or not—that one endures."

This paragraph makes sense in combination with his famous saying: "What does not kill you makes you stronger." However, Nietzsche's wish above is also very funny and a harmless violation of our deep-rooted beliefs by the incongruity theory (2) since we do not usually wish a friend misfortune. Thus, we can use the above shocking quote as a way of playing with our misfortunes in the way suggested by Chaplin.

Therefore, in this exercise, we consider a disturbing event or circumstance that took place in the distant past that we have struggled with for a long time, and despite its painfulness we try to see a positive impact it has had on us. We recite the shocking quote above, we remember our misfortune and begin to laugh out loud when we finish the sentence: "To those human beings who are of any concern to me I wish suffering...", and then continue to laugh as we recite the rest of the quote.

After repeating such exercises, once we have experienced the benefit of laughing at distant problems, we can gradually begin to laugh at more recent disturbing events or circumstances.

(xii) **Laughing at long-term difficulties or suffering**

The final exercise aims to use laughter to come to terms with and accept not just isolated misfortunes and disturbing events and circumstances in life, but also any long-standing pattern of suffering.

As in the previous exercise, we first try to identify what positive result may have come out of this long term difficulty which would provide us a new perspective for interpreting the problem. Then, we use another well-known

quote by Nietzsche. "My formula for greatness in a human being is amor fati [Latin for: love of fate]: that one wants nothing to be different, not forward, not backward, not in all eternity. Not merely bear what is necessary, still less conceal it—all idealism is mendacious in the face of what is necessary—but love it".

In today's world, this statement violates our usual beliefs and is therefore funny by the incongruity theory (2) as it encourages us not just to bear (as we are normally advised to do by friends and experts) but to love all that has happened to us including all our suffering. Again, this makes sense with Nietzsche's motto: "What doesn't kill you makes you stronger." It is also in line with Chaplin's suggestion (4) if the suffering took place in the past.

Therefore, in this exercise, we recite the above quote and when we reach to the final words "but love it", we laugh out loud while we are thinking of our suffering.

We note that some of these protocols can be combined at the same time. For example, the playful face protocol which includes singing can be combined with (x) or (xi) or (xii).

Our case studies provide anecdotal evidence that by consistently practicing these protocols one becomes capable of seeing the funny side of life in almost anything that we one experiences.

4   Concluding remarks

We have formulated an algorithmic framework for humour, based on five main theories of laughter, with which the user can find amusement and humour in almost all situations. Self-initiated humour protocols are, unlike existing laughter therapies which are usually practiced in groups, self-administrable and are learned and practiced by the user on their own. This means that virtual agents can be developed to help the user to learn to laugh, which can potentially be a significant breakthrough in mental health and well-being in general.

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