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Negotiating life with laughter.

A Grounded Theory.

By

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Declaration

I declare that this thesis has not been submitted as an exercise for a degree at this or any other university and it is entirely my own work.

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Summary

Using a classic 'Glaserian' grounded theory methodology, the phenomenon of laughter was initially investigated in a broad sense. Grounded theory does not require, or recommend the commencement of investigative work which depends upon a predefined research question. It is primarily an inductive approach to research.

Through explorative research, the emergent concepts pointed to three major principles:

1) Laughter is instigated by degrees of discord unique to the individual
2) Laughter is configured developmentally, interpersonally and contextually
3) Laughter serves the purpose of buffering challenges and shifting states

The nature of the data collected consisted of:

1) Field notes (Naturalistic observations)
2) Gathering existing publicly available raw data

   (Naturalistic web-based discussions & purposively targeted topics)
3) Purpose built and managed online discussion forum
4) Interviews x 21
5) Extant literature

Data was analysed according to the grounded theory principles of constant comparison of incident to incident. Patterns were conceptualised through memoing alongside the stages of open coding, selective coding and theoretical coding – which led to discovery of the core.

Laughter was found to be a multidimensional dynamic behaviour, which serves the purpose of negotiating experiences of discordance. The degree of discordance which laughter can help to negotiate is dependent upon the individual's own range for laughter.

Laughter may be implicated, not only in the buffering of challenging emotions which the individual may be experiencing in the moment, but also in the reconsolidation of memories when previous challenging experiences are recalled in conjunction with laughter.

Implications include enhanced understanding of self-soothing, attachment, mood enrichment of others. Laughter may also offer therapeutic, as well as pedagogical benefits. Therapeutic benefits may include the intentional buffering of challenging emotions. Client laughter may offer therapists meaningful 'markers' in sessions, to which

they can return at an opportune time. Pedagogical opportunities include enhancement of learning environments in addition to laughter representing similar markers to those in therapeutic sessions.

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1: Introduction - Choosing a grounded theory approach

The decision to use a classic grounded theory approach when undertaking a PhD can present the researcher with a conundrum. Does one follow the dictates of grounded theory verbatim by presenting a theory with an integrated, but not necessarily standalone literature review? Or, does one follow the more typical approach to a literature review as a standalone chapter which justifies, and to varying degrees, directs the research question? As Dunne (2011), in his discussion of the place of the literature review in grounded theory and the associated concerns explains:

> The fundamental concern is based on the premise that a detailed literature review conducted at the outset may 'contaminate' the data collection, analysis and theory development by leading the researcher to impose existing frameworks, hypotheses or other theoretical ideas upon the data, which could in turn undermine the focus, authenticity and quality of the grounded theory research (Dunne, p. 114).

Classic grounded theory espouses an approach to extant literature, which does not ignore the literature, but which weaves the literature into the grounded theory when it has been developed to a "strong almost formulated, theoretically complete theory as the researcher sorts and starts the write up phase" (Glaser, 1998, p. 76). It is advised that at this point, that the researcher "turns to the scholarly work of weaving in the literature" (Glaser, 1998, p. 76).

The undertaking of a grounded theory does not, therefore, commence with the development of a research question. Rather, Glaser and Strauss (1967) propose that in the case of theory generation, hypotheses are outcomes which are indicated by findings, as opposed to being tested with findings.

Whilst this approach is readily embraced by proponents of the classic grounded theory method, it does not necessarily appeal to others of a different ideological position. As Coffey and Atkinson (1996) so frankly expressed in their discussion of methodological issues:

> The open-mindedness of the researcher should not be mistaken for the empty mindedness of the researcher who is not adequately steeped in the research traditions of a discipline (Coffey & Atkinson, 1996, p. 157).

Ideological differences aside, Glaser (1998) offers a pragmatic view, which is cognisant of the fact that individual universities and grant awarding bodies have particular expectations and requirements which include an obligatory literature review, which guides the formation of a research question. Not unusually, this was the position in my own situation. Furthermore, the prequel to the current research (at early submission and grant application stage) was an intention to carry out an empirical investigation of the efficacy of laughter as a means to promote psychological well-being. Whilst a hypothesis had not been fully formed at this stage, the theme of the investigation was certainly pointing towards a research question which would explore the usefulness of laughter as a therapeutic intervention.

That early research proposal was informed by a combination of my exposure to therapeutic approaches to psychological disorders in my previous postgraduate experience of a M.Sc. in applied psychology and my sceptical interest in unrefuted claims which were arising in the media around that time with regards to 'laughter therapies'. A literature review, informed by this interest in laughter's apparent relationship to well-being was therefore a valuable and necessary undertaking at that stage.

It was evident in the early stages of my PhD research and early literature review, that before I could operationalise such a study, I should be comfortable with the accepted definition of laughter, which I expected would be well documented in the literature. However, I discovered some variety in how researchers were operationalising laughter in such studies, with approaches such as the following transpiring: "Individuals were said to be laughing when they were producing the vocalization which is characteristic of laughter" (Dezecache & Dunbar, 2012, p. 776).

It promptly came to light that laughter comes in many forms and whilst many researchers were investigating aspects of that which appeared to be a single phenomenon, there was little evidence of an agreed definition of laughter which was replicated across

studies with which I felt I could comfortably build the conception of the intended empirical study upon. Furthermore, it often transpired that what was being presented as a study of laughter, might have been more accurately presented as a study of humour, a point explored in detail by Martin's (2001) examination of methodological issues surrounding the study of laughter and humor. The confounding of these two related, but separate phenomena further frustrated the necessary starting point of an examination of laughter.

Indeed, the nuances and subtleties of laughter variations have presented challenges to researchers in the field of gelotology (the scientific study of laughter). These challenges have arisen oftentimes as a consequence of methodological difficulties associated with measuring laughter (Martin, 2001) and at other times as a consequence of a lack of adequate understanding of what it is that is actually being measured (Devereux & Heffner, 2007; Gervais & Wilson, 2005).

Variation is common when it comes to operationalising laughter research. This is particularly evident when it comes to researching purported health benefits which are advocated as being correlated to laughter. Indeed, whilst the word 'laughter' appears in the title of many articles, what becomes evident when reading beyond the abstract, is that 'humour appreciation' is arguably the variable under investigation.

Perhaps more cynically, after reading the extensive review of such literature carried out by Martin (2001), one might be forgiven for suggesting that many of these studies are more akin to investigations of the effects of watching comedy DVDs, as opposed to being studies of the effects of laughter, which Martin found is commonly not measured in any systematic fashion, if at all.

Unfortunately for the proponents of the sentiment behind the phrase 'Laughter is the best medicine', it transpires, according to Martin, that this notion is not strongly supported by the evidence. He does not however suggest that research in the area should be abandoned; rather, he advises that extra care needs to be taken as regards methodological considerations when researching laughter.

With researchers seemingly having difficulty developing an empirically sound understanding of laughter's role with regards to physiological health, one might imagine that laughter research could perhaps fit more readily into the field of positive psychology. Indeed, Martin Seligman, who is considered to be a pioneer in the field of positive psychology, cites research which shows how "just one portrait of a momentary positive emotion convincingly predicts longevity and marital satisfaction" (Seligman, 2003, p. 4).

In this case, Seligman was referring to research by Harker and Keltner (2001) which examined smile types (Duchenne and non-Duchenne) in high school year book photos which indicated that those rated as Duchenne smilers were more likely to have higher levels of life satisfaction throughout their adult lives - several decades after the photos were taken. A smile is categorised as Duchenne when the zygomaticus and orbicularis oculi facial muscles are activated – in other words, "the skin around the corners of your eyes crinkle" and "the corners of your mouth turn up" (Seligman, 2003, p. 3). Essentially, those who smiled in a Duchenne fashion in a class photo were more likely to be happier and in lasting relationships over thirty years later, even when levels of attractiveness were controlled for (Harker & Keltner, 2001).

Despite this however, Seligman does not expand upon laughter, which it could be argued may be a more distinct portrait of a 'momentary positive emotion' than a smile is, as laughter can include not only the act of smiling, but also the vivid stereotyped vocalisation described by Provine (2000), commonly accompanied by exaggerated body movements. To the contrary, Seligman focuses upon the differences between momentary states of joy, which he suggests are at times hedonic 'shortcuts' to feeling good, and the more 'authentic' positive states which arise from the exercise of strengths and virtues (Seligman, 2003).

However, despite the lack of substantive comment on the subject of laughter by Seligman, a chapter of the *Oxford handbook of methods in positive psychology* (2007) is dedicated to calling for an integration of the study of laughter with positive psychology. In the chapter, Devereux and Heffner draw attention to the areas of positive psychology in which they believe laughter may play a valuable role in such broad arenas as pain reduction, formation and enhancement of bonds, enhancement of resilience and coping skills and understandings of the interactions between mind and body (Devereux & Heffner, 2007).

They then go on to review the literature and draw a similar conclusion to the aforementioned review by Martin - that overt laughter is often not measured in a meaningful way and that laughter and humour need to be examined independently of each other if we wish to truly understand the multifaceted nature of the laughter behaviour.

Expanding upon this multifaceted nature by returning to the earlier discussion of learned versus innate properties of laughter, a further point of discussion remains outstanding, which relates to the question posed previously – how do we investigate what purposes laughter fulfils in the human experience?

The answer is not straightforward, as it depends upon which type of laughter is being studied. Indeed, according to Gervais and Wilson (2005), it has been convincingly proposed and supported by neurological investigative data that there are two distinct types of laughter – one which is emotionally charged, beyond conscious control and which occurs in response to 'non-serious social incongruity', such as in a game of peek-a-boo with an infant. They recognise and label this form of laughter as Duchenne laughter. This type of laughter, they propose, is likely to be of great interest to those studying positive emotions.

The second type is described as laughter which they suggest is consciously controlled and is termed non-Duchenne laughter. This, they propose, might include such strategic laughter types as sarcastic, derogatory, self-deprecating or nervous laughter for example. Studying these different forms of laughter empirically requires differing methodological strategies which recognise that different phenomena are occurring.

Gervais and Wilson also introduce what one might describe as a further sub division of laughter in terms of *spontaneous non–Duchenne*, which they acknowledge as being problematic, as it crosses the "conceptual divide" between Duchenne and Non-Duchenne (Gervais & Wilson, 2005, p. 401).

They propose that this spontaneous non-Duchenne laughter is best thought of as non-Duchenne laughter which has developed to a point of automaticity. They cite the example of conversational laughter, which, as mentioned earlier, has the characteristics of Duchenne, in that it appears to occur beyond conscious control, yet it most often occurs in the absence of humour, which suggests an element of management.

Considering these points, perhaps it would be wise to reconsider the experience and behaviour of laughter, not only in dichotomous terms of Duchenne versus non-Duchenne, but also acknowledging that laughter types exist on a continuum, with aspects of each intermingling in complex fashions and serving a variety of purposes, depending upon the temporal and situational context.

Indeed, from an experimental perspective, one could easily imagine a situation where two strangers are watching a humorous video together as part of a study and are laughing aloud. At some point, Duchenne laughter may momentarily give way to non-Duchenne laughter in one of the parties. Perhaps only one of them finds a particular scene hilarious and the other finds it to be little more than amusing but feigns a laugh during that moment for any number of socially motivated reasons.

This might include a participant's behavioural change, provoked by an implicit cue, to conform to what they believe is the purpose of an experiment (Fleming & Zizzo, 2015), self-consciousness at not having an adequate (socially desirable) sense of humour (Friedman, 2014; Provine, 2000), or even a desire to appear likeable to the other participant (Crawford, 2003; Reysen, 2006). Each of these reasons, quite distinct from the laughter itself, could have its own concomitant physiological or psychological effects – perhaps lowering or increasing blood pressure, increasing or decreasing stress hormones and so on. All of this could happen in a matter of moments.

Furthermore, operationalising differentiations between Duchenne and non-Duchenne laughter, whilst not impossible, is a challenging task, which typically relies upon an extension of the facial action coding system (FACS), originally devised by Ekman (Ekman & Friesen, 1976). For example, Keltner and Bonanno (1997) extended this system in their study of laughter's role in processing bereavement. They recorded laughter as Duchenne and non-Duchenne when "Duchenne and non-Duchenne smiles

(coded using FACS) were accompanied by audible laughter-related vocalization and an open mouth." (Keltner & Bonanno, 1997, p. 692). A five-point scale was used to score facial movements from 1 – minimal intensity to 5 - extreme intensity. Keltner and Bonanno used one secondary coder who was blind to the study's purpose, while the primary coder was blind to the participant's "levels of grief, self-reports of emotions, verbal-autonomic dissociation and personality." (Keltner & Bonanno, 1997, p. 692). Inter rater reliability was assessed, with a ratio of agreement of .80.

In a similar vein, Mehu and Dunbar (2008) observed social interactions in the field and noted facial expressions from distances of 5-20 meters (without the aid of video recordings), which they then classified as 'spontaneous' when they were 'similar' to Duchenne smiles as described by Eckman & Friesen (1982). By extension, they stated that "A spontaneous laugh was merely an event of laughter accompanied by a spontaneous smile whereas a deliberate laugh did not include spontaneous smiling" (2008, p. 1755).

Interpreting the veracity of the findings in these and similar studies is challenging, especially when one considers the robust (but not uncontroversial) counter argument to the very underpinning of Ekman's FACS – the concept of innate basic emotional expressions itself. In her extensive rebuttal of the "myth of universal emotions", Barrett (2017a, p. 51) suggests:

> The historical record implies that Greeks and Romans did not smile spontaneously when they were happy. The word "smile" doesn't even exist in Latin or ancient Greek. Smiling was an invention of the middle ages, and broad, toothy-mouthed smiles (with crinkling at the eyes, (named the Duchenne smile by Ekman) became popular only in the eighteenth century as dentistry became more accessible and affordable…Perhaps, sometime in the last few hundred years, smiling became a universal, stereotyped gesture symbolizing happiness. Or, perhaps smiling in happiness is simply not universal (Barrett, 2017a, p. 51).

She then goes on to wryly point out that innate happy smiling was unlikely to have been suppressed in the human race until the advent of dentistry. Barrett's argument certainly adds to the complexity of operationalising studies of laughter. Disentangling such complexities is undoubtedly challenging, but there is another salient point worth

considering. What of the meaning which the participants attach to the experience? Is the best course of action in studying laughter to take blood samples, have participants fill in questionnaires, code facial expressions, or is it to observe laughter as it occurs in naturalistic environments and to investigate the meanings attached to the experiences of laughter which people have across a variety of contexts?

Perhaps if psychology is to advance the study of the phenomenon of laughter, we must take a step back from the attention-grabbing notion of laughter as a natural elixir of life. We must consider, but transcend, descriptions of laughter existing only in dichotomous terms, or in tightly defined experimental conditions and we must also incorporate the meaning of the laughter as people experience it in real life contexts and how these experiences may influence the laughter itself. Perhaps such rich data would allow us to develop a truly integrated understanding of laughter which extends beyond its superficial measurement and categorisation.

The focus of the study therefore required a revision to the methodological direction, a direction which not only allowed, but encouraged exploration at ground level, rather than relying upon concepts which were already apparently taken for granted was sought. Consequently, an alternative approach, that of grounded theory, was chosen as being the most suited to exploring the phenomenon of laughter in a broader sense, with an open (but not empty) mind.

During the development of my grounded theory research skills, I experienced ongoing concern with regards to my early exposure to the literature in the field. Whilst I kept these concerns in mind, I proceeded with the research whilst endeavouring to avoid any conscious theoretical influence upon the emergent conceptual development. I continued to follow the guidelines of the grounded theory method (Glaser & Strauss, 1967) in all other regards.

On a practical note however, had I not been exposed to the challenges in the literature with regards to defining laughter, I would not have engaged in the grounded theory approach to researching the behaviour. Consequently, I would not have had the opportunity to develop particular areas of interest which buoyed the early stages of a

grounded theory exploration. (These initial areas of interest are outlined in the summary of Chapter 2, after a more detailed consideration of extant literature is offered).

As the research progressed and at a time when the core concept of the current theory had tentatively emerged, I attended a grounded theory methodological training workshop, where I had the opportunity to discuss this literature review issue directly with Dr. Glaser, a co-creator of the methodology. At that stage of the theory development, I had believed that the core concept of the burgeoning theory was likely to be 'emotional shifting'. In response to my concerns, Dr. Glaser asked me "Did you do a literature review of emotional shifting?"

When I explained that I hadn't he then informed me "Then you haven't yet done the literature review." He recommended that I get back to work developing the theory and to see if 'emotional shifting' patterned out as a core concept. This being a grounded theory, I was satisfied to take direction from one of the architects of the approach and I continued with my research in a manner compatible with that approach. It transpired that whilst emotional shifting has been integrated into the theory as an important principle, it did not maintain its place as the core concept of the theory.

However, whilst Dr. Glaser's advice resolved the theoretical issue, it did not resolve the practical issue of the structural presentation of the thesis. Upon consideration of this issue, it was decided to take a 'middle ground', referred to by Dunne (2011, p. 118) with regards to the undertaking of a literature review in grounded theory. However, in the current work, this middle ground concept was applied more specifically to the positioning of the literature in the thesis document.

> The decision to wait until after the findings have been presented to engage with extant literature might be met with confusion by examiners or reviewers who may be experts in the substantive field, but not necessarily experts in grounded theory, thereby leaving the researcher open to criticism and significant re-workings (Dunne, 2011, p. 120).

In order to avoid such an outcome and in keeping with my own familiarity with and preference for a preliminary literature review in the preparation for and presentation of a report, it is my desire in the current thesis to attempt to bridge this particular gap between

the classic grounded theory approach and the more typical approach of a standalone literature review, which is presented in the first instance. In order to do this, in chapter 2, I simply offer up the salient aspects of the extant literature which is representative of the field in general – much of which I had encountered when making my initial application for participation in the PhD programme which I ultimately undertook. More detailed and salient integration occurred as the thesis expanded in depth and layers of knowledge grew through valuable theoretical integration, rather than theoretical compression under the weighty influence of concepts which had already become dogma.

Rather than this approach leading to the development of a literature informed research question which guided a predetermined direction for the theory development, the literature led to a broadening of the scope of the study to that of the exploratory inductive approach, which grounded theory utilises. Consequently, despite the forthcoming presentation of an introductory literature overview, it is important to note that the topic under investigation was guided by the data, rather than the initial exposure to the literature. This methodological point is explored in greater detail in chapter 3 – Methods.

Having introduced above the initial reasoning behind the choice of methodological approach, as well as the steps taken to overcome initial methodological concerns with regards to extant literature, attention now briefly turns, in the forthcoming section 1.1, to mapping out the structure of the thesis document.

1.1. Thesis outline

In the following **Chapter 2: An introduction to the phenomenon of laughter**, I initially acknowledge the respected work of researchers and academics in the field of laughter research by presenting an overview of extant literature which is representative of the field of research.

The extant literature's inherent value is further embraced throughout the remainder of the thesis as I present each fundamental principle of the current theory with the inclusion of extant theory which was analysed and assimilated on the basis of its relevance as new data, rather than considering it as points of verification, or literature which *must* be incorporated in a literature review, due to its level of esteem. The main concepts of the current theory had already been formed before this integration had occurred and it was my goal to manage this integration in as seamless a fashion as possible, even though it was considered after the initial conceptualisation had emerged. Towards the end of the chapter, the focus turns to the aforementioned issues of defining laughter, which became apparent from the extant literature, along with the emergent challenges of a typological treatment of the behaviour.

Apart from the treatment of the literature, which has already been discussed above and will be expanded upon in the methods chapter, the remaining structure is somewhat different in its layout from a typical empirical dissertation, or indeed a typical qualitative descriptive analysis, in that it does not present a results and findings chapter. Rather, the theory develops over the course of chapters 5, 6 and 7. However, none of these three chapters is more important than the other. Nor is any one of the three chapters stand alone. The chapters have been presented in this manner for the purpose of providing some structure to the understanding of laughter and it was logical to begin the presentation with a consideration of what instigates laughter and how this occurs (chapter 5), followed by an exploration of the factors which configure laughter's presentation (chapter 6) and finally, an exploration of the impact of laughter (chapter 7). This also happens to mirror the process of laughter - beginning with its instigation and ending with its impact.

However, the theory did not emerge in a linear manner. It is not the case that there were three major findings, which emerged one after the other, with each major finding fitting neatly into its own chapter. Grounded theory development is responsive to the data, in that the researcher concurrently collects, codes and analyses the data (Glaser, 1978).

Just as laughter is presented in the forthcoming theory as being is a multifaceted phenomenon, the current theory itself is multifaceted in that it is fashioned from interrelated principles – none of which is sufficient in its own right to give a comprehensive understanding of laughter. Each of these principles is paramount in the understanding of laughter and whilst they are presented in a chronological fashion for the purposes of a presentable structure, the concepts which helped to form these principles were continuously emergent in nature and these concepts work in tandem to conceptualise laughter.

In summary, the thesis is laid out as follows:

- **Chapter 2: An introduction to the phenomenon of laughter,** in which salient extant literature is explored.
- **Chapter 3: Essential concepts – Multidimensional approach to laughter.** Concepts which are central to the theory are introduced, including consideration of laughter types.
- **Chapter 4: Method** explores in further detail the reasoning behind the methodological choices made in the current investigation and explains the means by why the research was operationalised.
- In **Chapter 5** I explore in detail the first fundamental and most basic principle of the theory – **Discordance Instigates Laughter**.
- In **Chapter 6**, I detail the second fundamental principle of the current theory – **The Configuration of Laughter**.
- This is followed in **Chapter 7** by the exploration of the third fundamental principle – **The Negotiation of Discord**
- Finally, in **Chapter 8**, I provide an overview and summary of the theory, along with a discussion of the contributions which the current research offers the body of literature, as well as examining the limitations of the study and the possible opportunities for future research which have arisen, before offering a reflexive consideration of the research and finally, the conclusion.

2. An Introduction to the phenomenon of laughter

Laughter is an ubiquitous behaviour, which at its most basic level appears to be a universal and instinctive action. Ontogenetically, laughter has been shown to occur pre-verbally in typically developing infants from as early as 2 months of age (Deacon, 1997). It also occurs amongst congenitally deaf and blind children during a similar time frame (Eibl-Eibesfeldt, 1973), supporting the notion that the behaviour of laughter can occur without visual or auditory learning cues.

The existence of laughter type utterances in primates engaging in play (Provine, 2000) and even amongst rats which exhibit 'laughter - type chirping responses to tickling' (Panksepp, 2000) suggests that human laughter has evolutionary homologues across mammalian species.

The evidence for laughter's phylogenetic and ontogenetic origins suggests that laughter predates speech and that the 'pant like' play vocalisation of the great apes, which is considered to be analogous to human laughter, would have originated in our evolutionary line approximately 6.5 million years ago (Gervais & Wilson, 2005). Whilst these 'pant like' sounds share similarities to human laughter, in that they have a repetitive structure and occur in conjunction with playful interactions, they differ insofar as each single pant vocalisation occurs alongside a series of single inhalations and exhalations (Provine, 2000).

According to Provine's 'Bipedal Theory of Speech Evolution' (Provine, 2000), the stereotypical 'Ha Ha Ha' sound of human laughter occurs along the time span of a single, interrupted exhalation. This is relevant in that the thoracic structure freed up by human bipedalism allows this concurrent vocalisation during a broken exhalation to occur and such a change is described as having being 'fully developed in human ancestors' by about 4 million years ago (Gervais & Wilson, 2005).

Combining this information with Deacon's assertion (Deacon, 1992) that language could not have evolved prior to 2 million years ago as a consequence of the absence of the necessary brain capacity, Gervais & Wilson (2005) estimate that the ritualised form of

laughter that we know today, would have an origin of approximately 2-4 million years ago.

Perhaps not surprisingly, with the evidence suggesting such a lengthy evolutionary foundation, laughter is widely accepted to be universal in its cross-cultural occurrence and identifiability (Bryant & Aktipis, 2014; Gervais & Wilson, 2005; Glenn, 2008; Sauter, Eisner, Ekman, Scott, & Smith, 2010). However, it is also suggested that aspects and forms of laughter are subject to learning and that laughter is at times used as a communicative tool, which can present as a form of punctuation in discourse (Glenn, 2008) or a palpable expression of amusement, which can just as readily communicate meaning in its inhibition (not laughing at a joke) as it can in its presence (Duggan, 2014b; Friedman, 2014).

The social characteristics and impact of laughter are broad and can range from the enhancement of affiliation (Smoski & Bachorowski, 2003) to the creation of a perception of social exclusion (Klages & Wirth, 2014). Laughter also holds symbolic meaning in a variety of circumstances, such as in power negotiations (Rees & Monrouxe, 2010) and religious tradition (Abe, 2010). Laughter can also indicate, amongst many other things, such complex social signals as ridicule (Billig, 2005; Duggan, 2015) or even 'self-humbling' giggling in the presence of others of higher social standing (Provine, 2000).

Whilst laughter is said to be readily identifiable as a consequence of its stereotypical presentation (Provine, 2004), it has been shown to occur in many different forms. As Cosentino, Sessa, & Takanishi explained in their review of quantitative laughter classification techniques (2016):

> Even if laughter is a stereotyped sound, meaning that it can be easily recognized and classified as "laughter" regardless the culture, the age, and other differences among the laughing subject and the audience, laughter is a repertoire of highly variable vocalizations that includes qualitatively distinct sounds (Cosentino et al., 2016).

These 'distinct sounds' present as having different acoustic properties (Bachorowski & Owren, 2001; Hudenko, Stone, & Bachorowski, 2009b; Szameitat, Darwin, Wildgruber, Alter, & Szameitat, 2011), with variations in laughter types having been shown to activate

distinct neural regions in perceivers (Wildgruber et al., 2013). Accordingly, people are adept at recognising variances in the acoustic properties of laughter to such an extent that they can implicitly perceive differences in recordings of decontextualized laughter between friends and strangers (Bryant et al., 2016b).

In addition to brain specificity with regards to the *perception* of laughter, distinct neural pathways have been accorded to the *production* of what the researchers termed 'voluntary' and 'involuntary' laughter (McGettigan et al., 2013; Wild, Rodden, Grodd, & Ruch, 2003), with the amygdala emerging as being of particular importance in the processing of laughter (Sander & Scheich, 2001). Despite elements of specificity however, individual differences have been shown on a neurological level, which suggest that the perception of laughter leads to a subsequent interpretation on the part of the listener. Such interpretations are indicative of a 'whole-brain mechanism', rather than a 'basic behavioural reflex' (McGettigan et al., 2013, p. 8).

Not all forms of laughter occur in typical circumstances, however. Whilst the behaviour of laughing may most readily appear to be a spontaneous response to humorous stimuli, this is but one form of incident in which laughter is involved. For instance, particular neurologically impactful syndromes, such as Parkinson's disease and multiple sclerosis have been known to cause a disorder known as Pseudobulbar affect, which disrupts the ability of the individual to inhibit emotional expression, leading to seemingly uncontrollable bouts of laughter (Ahmed & Simmons, 2013). Similarly, traumatic brain injuries can also result in laughter which is "disproportionate or inappropriate to the social context" (Ahmed & Simmons, 2013, p. 483). However, less common forms of laughter such as this are not the primary focus of the current study.

Aside from the cognitive and neurological considerations of laughter, the social meaning of laughter has been subject to change throughout history, with laughter coming in and out of favour, depending upon the prevailing cultural and societal norms at that time. As Provine (2012) described in his summation of the differences between the considerations of laughter in the time of Plato, Aristotle and contemporary understandings, "In our politically correct, feel-good, be-happy time, we are shielded from, and underestimate, the dark side of laughter that was better known to the ancients." (Provine, 2012, p. 42).

As such, theories of laughter and invariably, laughter's related factor of humour, have gone through several historically situated iterations. As sociocultural standards changed, alongside methodological and technological advances, which allowed for new approaches to studying laughter, so did understandings of laughter. These understandings have traversed and been influenced by philosophical considerations (Descartes, Haldane, & Ross, 1911; Hobbes, 1997; Plato, Hamilton, & Cairns, 1973), through journeys into the unconscious mind (Freud, 1905/2003), to knowledge which is more recently informed by contemporary neurophysiology (Parvizi, Anderson, Martin, Damasio, & Damasio, 2001), observational research (Provine, 1996) and non-invasive neurological imaging (Lavan, Rankin, Lorking, Scott, & McGettigan, 2017).

Furthermore, as access to and dissemination of contemporary research has become increasingly simplified in the modern digital age (Ahmed, David, & Allen, 2015), certain aspects of such research garner more attention than others. As Sandra Blakeslee explained in a journalist/scientist joint contribution aimed at assuring a quality standard of research dissemination:

> The number of traditionally trained science journalists continues to decline. Meanwhile, the number of people who blog about science is rising. This is an important distinction. Many science blogs are excellent. They cover the same topics you might see in the New York Times, only they do it in a more relaxed, entertaining style (Blakeslee, DiChristina, Raeburn, & Lambert, 2012, p. 619).

One such aspect of the laughter literature which has emerged as garnering great journalistic and blogger attention is any apparent correlation between laughter and wellbeing – both physical and psychological. This is despite the possibility that many of the reported findings are either of questionable validity in the first instance (Martin, 2001), or that they may be misinterpreted by journalists, editors, or bloggers (perhaps inadvertently) in their attempt to make them entertaining as well as educational. The concept of 'laughter as medicine' has, it seems, become a popular concept in online media (Allen, 2014; Shaver, 2013; Williamson, 2004).

This therapeutic notion has been embraced and promoted by many emergent approaches which seek to harness laughter's apparent benefits, including, 'Laughter

Yoga' (Kataria, 2010a) and related 'laughter therapy' methods, such as those explored by 'laughologist' Albert Nerenberg, who discussed his documentary on the topic with me in a podcast interview (Duggan, 2014c).

These relatively recent approaches have separated laughter, in a very practical sense, from any link to humour as they evidently treat laughter as a distinct entity, which can be produced on demand to apparently beneficial effect, in the absence of any humour whatsoever, as Dr. Kataria proposed to me in a podcast interview which examined the topic of laughter yoga, which he had invented:

> Having cancer is not funny. People suggest that you should laugh, but you can't see anything funny. So, that's why laughter yoga, being an exercise, you don't have to see anything funny, but you just laugh as an exercise, which will boost your oxygen and makes your cancer survival chances much better. (Duggan, 2014a).

Placing claims of 'healing properties' of laughter aside for the moment, the reality that laughter can and does exist in the absence of humour has emerged as another point of significance in the current theory and this point returns the current discussion to the theme of the beginning of this chapter 1 – that of a conundrum.

To approach the examination of laughter within the restrains of time and resource limited doctoral research, one is faced with a challenge. Either have an explicit focus upon a specific form of laughter, or forms of laughter which one is researching, or investigate laughter in terms which reflect a position that the behaviour is in fact a multi-faceted phenomenon, the understanding of which can benefit from a broader field of analysis.

Whilst the current research was not undertaken with either approach as a pre-requisite, the emergent nature of concepts in the grounded theory methodology resulted in the development of an approach which incorporated the latter theme. The current research was exploratory in nature and consequently, in line with the grounded theory methodology and unlike alternative quantitative and qualitative approaches, a research question was not the starting point of the research. Perhaps the closest a grounded theory brings one to the formation of a research question is the discovery of a 'substantive problem' (Glaser, 1998, p. 115).

Through the constant comparative analysis of data,[1] categories and emergent theoretical concepts related to the behaviour of laughter, it has emerged that laughter is a component in a temporally contextual psycho-physiological process, which works towards resolving the 'substantive problem' referred to above. What that substantive problem is, is the subject of chapter 5. How and through what influencing factors it is processed is the subject of chapter 6 and 7.

However, prior to exploring these core aspects of the theory, and indeed the method which was implemented to develop the theory, there is an issue outstanding. As was discussed in the introductory chapter, there was a troublesome matter which had emerged from the literature, which went right to the core of the topic to hand. That matter is the subject of the next section, which explores the challenges of defining laughter.

[1] Otherwise known in grounded theory terminology as comparing incident to incident

2.1. Challenges of defining laughter

How does one define laughter? As straightforward a question as this may seem on first consideration, given some thought, the true complexity of laughter becomes apparent. Defining laughter poses very real challenges to researchers in the field. The notion of 'you know it when you see it' is useful if the subject of laughter is little more than a topic of general conversation.

However, for the purposes of examining complex psychological processes, this notion offers a starting point which is scant on information. In specific circumstances, when researching very particular aspects of the phenomenon, such as acoustic profiles, a simple working definition, such as that used by Smoski & Bachorowski "Laughter was broadly defined as being any sound that would be considered a laugh if heard under everyday circumstances" (Smoski & Bachorowski, 2003, p. 331) may be operable, if not a little circular.

The present study however, did not set out to focus upon one particular aspect of laughter, and as a consequence, there are a myriad of varieties of laughter which have emerged as being worthy of consideration. These variants range from discreet giggles to energetic guffaws, each of which can also vary in form, function, intention and consequence.

To further complicate matters, the expression and understanding of these variations is also dependent upon such broad factors as individual differences, life experiences, the situational context which instigated the laughter, in addition to the interpretations of the listener/audience to the laughter and the laugher's intention, or lack thereof.

Neuroscientist, Robert Provine, renowned expert on the topic of laughter, describes laughter in its most basic form as "A regular series of short vowel like syllables that are usually transcribed in English as "ha-ha," "ho-ho" or "he-he." (Provine, 2000, p. 1). Accepting Provine's portrayal of the breathing patterns associated with laughter being stereotypical in nature, along with his description of the written representations of typical laughter, each of us also knows from lifelong experience that even within these descriptive parameters, laughter styles vary enormously – a point which has been

clarified in experimental settings in various studies (Bachorowski & Owren, 2001; Hudenko, Stone, & Bachorowski, 2009a).

Rendering laughter in the written form ha-ha is one thing – observing it in its multitude of naturalistic forms is another. Studying the video clips in the resource of the Belfast Induced Natural Emotion Database (Sneddon, McRorie, McKeown, & Hanratty, 2012) or even a cursory view of the four minute long 'Skype Laughter Chain' (2008) video on YouTube, provides one with ample evidence of laughter's diversity of expression.

It quickly becomes obvious from observing such data sources that the vocalisations of laughter can range wildly. This variation can extend from a quiet panting sound, to an exuberant roar coupled with a series of deep breaths and exhalations. These vocalisations are typically accompanied by any of a broad range of bodily movements, which can vary from a slight smile, to a flapping hand gesture, to an utter loss of bodily control. Anecdotally, this loss of control can result in a range of apparently helpless states in which the laugher may collapse to the floor, roll into a foetal position and sometimes even lose control of bladder and/or bowel functions. The common expression 'I nearly wet myself laughing' is testament to the likelihood of this anecdote being grounded in reality.

It has emerged in the current study that laughter vocalisations and associated bodily movements are dynamic and contextual, in that no one laughter type has an unequivocal boundary or reliably predictable associated trigger. Indeed, as was mentioned earlier, such diversity in the behaviour presents great challenges to researchers in disparate fields who might seek to find a unified means of quantifying laughter (Cosentino et al., 2016). Furthermore, the interpretations of laughter's purpose and meaning are as diverse as the laughter expressions themselves and can range in academic and clinical understandings from laughter being considered in terms of a complex aspect of linguistic interactions (Glenn, 2008) to functioning as a component in the relief of psychic energy (Freud, 1905/2003).

Even the seemingly unequivocal notions of laughter being an audibly perceptible behaviour which can also be apparent visually as a result of an individual's outward body language (Morris, 2002) must be questioned, as participants in the current study

proposed that one can ‘laugh inside’, without producing a vocalisation. Rather than dismiss this inner laughter as irrelevant to the study however, it was decided to explore if such ‘internalised laughter’ shares the “fundamental pattern” (Glaser, 2001, p. 5) of other forms of laughter which would emerge in the study. However, while not wishing to downplay the relevance of such laughter at this early stage, I suggest that such internalised laughter is more akin to a ‘feeling of mirth’, as described by Hurley, Dennett, & Adams (2011).

With these points in mind, it follows that a grounded theory, with the behaviour of laughter at its core, must initially be open to exploring the patterns of behaviour surrounding laughter of any form which emerge as being relevant, as the evident behaviour of laughter alone is not the entire story and so, to define laughter as one phenomenon would be to underestimate the behaviour.

Indeed, it has emerged that laughter is a component part in a variety of behaviours which are bracketed by what comes before the laughter, as well as that which comes after it and this framework of behaviours which makes laughter so interesting to study and provides for a rich Grounded theory. While at its most basic level, laughter appears to occur in response to a stimulus, laughter is some distance from being a straightforward stimulus response phenomenon, as laughter is simultaneously responsive to and transformative of the environment. It can have lasting effects into the future and its expression or indeed, its suppression, can be influenced by events of the past.

Furthermore, it has transpired that while laughter can *appear* to occur spontaneously in reaction to a stimulus, with each individual having a contextually variable range of reactivity to different laughter triggers, it can also be thought of as being proactive at times, as it can be feigned and strategic. Consequently, there is great potential for a lack of correspondence between the aforementioned interpretation of the perceived meaning of the laugh by observers and the intention, or lack of intention, expressed by the laugher. In an interpersonal sense, laughter can be, and is often interpreted in a multitude of ways, ranging from an expression of joy to a vicious act of derision.

The expression of laughter, or our attempts to provoke it in ourselves or others can at times, due to the potential distance between intention and interpretation, actually serve to increase tensions. Laughter may even enhance tensions, such as in the discomfort

and emotional upset caused by intentional mocking laughter, uncontrollable nervous laughter, or the misinterpretation of a person's innocent laughter as being derisive in intent.

It seems that the greater the distance between the intention (or lack of intention) of the laugher and the interpretation of the audience to the laughter, the greater the likelihood of laughter being labelled as inappropriate or being seen as aberrant behaviour. Indeed, the research of Ruch, Altfreder, & Proyer (2009) into the interpretations by gelotophobes of laughter in ambiguous situations showed that when presented with the same stimuli, those with a fear of laughter found positively motivated laughter to be unpleasant, when compared to non-gelotophobes. While gelotophobia is on the extreme end of reactivity to laughter, taking responses to laughter as a matter of degrees, there is certainly scope for misinterpretation to occur in any interaction.

However, while the meaning of laughter in interactions is wide open to misconception, what has become apparent during the current research is that laughter is indicative of shifts of psychological states and inevitably, for better, or for worse, social/psychological/physiological change (or a combination of any and all) occur alongside the presence of laughter.

A caveat here however and a fundamental principle of this theory, is that whilst laughter (or basic aspects of it) may be an innate mechanism, its likelihood of occurrence is subject to a broad matrix of social and psychological influences which may either temper or enhance that likelihood. Furthermore, this tempering/enhancing need not occur after the stimulus event, nor must it be embedded in the stimulus itself (such as a poor-quality joke). Tempering and/or enhancing factors can be a pre-cursor to potential laughter provocations in the form of latent belief systems and influential prior experiences.

This tempering/enhancing influence is what differentiates apparently reactive laughter from a purely physiological reaction to an unexpected event, which by its very nature bypasses the time needed to contemplate belief systems, consequences and contexts. An example might be a reflexive withdrawal reaction from a hot surface. Laughter does not operate in an entirely reflexive fashion however, as beliefs can and do alter whether a person will laugh reactively (not entirely reflexively) at an unexpected stimulus.

Likewise, social pressures will not dictate if a reflexive action takes place. If a person sits on a pin in a crowded room, they are unlikely to successfully temper their reaction completely. Social expectations may influence the individual to control the extent of their reaction somewhat after the yelp, but one is going to recoil from an unexpected pin prick in any setting. A social setting will however influence (though not always prevent) the likelihood of laughter's occurrence to a great degree. Essentially, the likelihood of reactive laughter occurring is highly dependent upon the contextual setting coupled with the interaction of the individual's psychological makeup within that context.

Any attempt to define laughter is supplemented by considering what laughter is not. As alluded to above, laughter is not a pure reflex action. Furthermore, it would not be accurate to describe laughter as a mechanism which reliably occurs as a rapid response to a tangible and present stimulus, for the passing of time and the expanse of emotional distance are also configuring factors which promote or impede laughter – even when the laughter is in response to the humorous recollection of an historical event or memory, a point which is illustrated well by the concept below that 'tragedy plus time equals comedy.'

> Nearly all comedy could be classified under the heading "Tragedy." That is, the raw material of almost all jokes is serious subject matter. Being broke, hung over, fired from your job—whatever is bad news, that's what we kid about. Tragedy plus time equals comedy. Given a little time for the pain to subside, dreadful experiences often can be the basis of funny jokes or stories. (Allen & Wollman, 1998, p. 29)

In addition, the stimulus could just as easily be an imagined one, rather than a recollection of an actual event. These and other factors are crucially important in predicating whether laughter is available to the individual as a discord negotiation tool. These contextual and temporal factors, which often interact with each other, are collectively titled the *Contextual Laughter Configuration Matrix* in this thesis - a concept which will be discussed in detail in **Chapter 6: The Configuration of Laughter.**

The current research will propose that for the most part, throughout the lifespan we benefit from the state shifting properties of laughter and that this is the primary purpose of laughter. Indeed, I suggest that we are taught by example at an early stage of

development that our basic innate laughter reaction is a state shifting device which serves to manage minor tensions, a lesson which infants seize upon with great gusto and continue to develop throughout the lifespan.

With these points in mind, as has become evident from the variety of confounding variables introduced above, it transpires that the question of 'what is laughter?' is not readily resolved by means of a concise definition. As such, laughter is not considered throughout this thesis as a single phenomenon. The best effort at a providing a definition at this stage is to state that laughter is as an encompassing term for a variety of related behaviours. This definition will be expanded upon later, as the theory progresses.

Moving forward, this raises the question of what precisely are these varied behaviours which are collectively termed laughter? If one were to attempt to offer an exhaustive list of the various forms of laughter which occur in naturalistic settings, it would quickly become apparent how intertwined the role of context is with such laughter. As such, concepts of laughter benefit from understanding the context as much as they do from simply applying a tag to the overt behaviour, which is not the goal of grounded theory. As Glaser states:

> Grounded theory tries to understand the action in a substantive area from the point of view of the actors involved. This understanding revolves around the main concern of the participants whose behaviour continually resolves their concern. (Glaser, 2001, p. 99)

In the current study, the goal was to find and explore the main concern. The behaviour of interest in this case, which is engaged in an attempt to resolve this main concern is the phenomenon of laughter in its multitude of forms. In order to attain this goal, it became clear that it was not enough to merely label laughter types, but to explore on a conceptual level what is happening when laughter occurs. With this point in mind, I now explore the value (or lack of) of a typological value of to the current theory.

As was touched upon earlier, interpretation and consequent labelling of laugher types is dependent upon the milieu of preceding and trailing events and the meaning attached to them. One person's interpretation of laughter as ridicule is another person's

interpretation of innocuous shared laughter, depending upon their distinct contextual situations and psychological states.

By way of offering an example of the challenges of labelling laughter, in the early months of my PhD studies, I had the opportunity to speak with a colleague from the Language and Communications Department of Trinity College Dublin, Dr. Nick Campbell, who has extensive experience in the study of laughter's occurrence in discourse (Bonin, Campbell, & Vogel, 2012, 2014; Tanaka & Campbell, 2014). I was corrected by him when I mentioned the difficulties associated with eliciting 'genuine laughter' in a lab setting. "All laughter is genuine" he remarked.

He was of course correct in his assertion. All laughter is genuine - in a sense. What I had intended to portray to Dr. Campbell was that it was difficult to provoke what I understood at the time as being 'spontaneous laughter' in the lab. He was used to examining laughter as it occurs spontaneously in discourse, whereas I had made the mistake of trying to provoke laughter by playing 'funny' videos in the artificial setting of a lab-based pilot study. These issues aside however, his point remained with me. It is rarely entirely accurate to describe laughter in terms which imply that it is but one thing.

After all, not all laughter is of the apparently spontaneous mirthful type which springs to mind most readily when one thinks of 'genuine laughter'. One could genuinely and with good intentions set out to deceive another by pretending to laugh. Adults do it with young children regularly in an effort to convince them that their burgeoning attempts at humour are hilarious, as a Montessori teacher who participated in the research exemplified:

> You'll have a few that will always tell a joke. And we all have to laugh. You try to laugh, you're not really [laughing], but you know? That will have a knock-on effect and they'll all come in with a joke, that might make no sense, but we all have to laugh. (Bernadette)

Having accepted that laughter is not one thing, what of broader dualistic descriptions? In readings of contemporary extant theory, one could be excused for concluding that laughter is a binary process, along the lines of Duchenne/non-Duchenne (Gervais & Wilson, 2005), social/solitary (Provine, 2004), voiced/unvoiced (Bachorowski & Owren,

2001), spontaneous/volitional (Bryant & Aktipis, 2014; Lavan et al., 2017) and many similarly dichotomous descriptors.

Clearly, it is not the intention of the researchers in these cases to imply that laughter occurs in only two variants. I see this apparent binary treatment as being an inevitable consequence (particularly in quantitative studies) of the fact that researchers must, for practical reasons, choose which aspects of laughter they are referring to and it makes sense that they must then attach a relevant label to them.

Comparing one form of laughter against its mirrored form is a reasonable approach when researching the topic. However, as laughter is so multifaceted, I propose that it is not possible, or factually correct, to generalise such findings to all forms of laughter, which it must be added is highly unlikely to be the intention of the researchers. Unfortunately, it is the case however, that the results of such studies are prone to being cherry picked by the media and other commentators. Indeed, the present study uncovered a strong pattern of inaccurate media treatment of the topic of laughter.[2] It is likely that an empirical study of the reporting of laughter would confirm the pattern which has emerged in the present study, as apart from the topic of laughter, this tendency has been shown elsewhere to have borne out across various media reports of medical and complimentary health therapies (Wilson, Bonevski, Jones, & Henry, 2009).

Laughter tends to be reported upon with great enthusiasm in terms which imply that *all* laughter offers a specific benefit, with the apparent health benefits of laughter emerging in this study as being a commonly implicated property in everyday discourse. Such appealing beliefs have a tendency to permeate not only common discourse, but as Professor Rod A. Martin's extensive analysis of extant literature related to the topic has shown, these beliefs also permeate academic works, even in the absence of convincing supporting evidence (Martin, 2002).

Whilst considering laughter as a singular phenomenon, to which such popular principles as 'laughter is good for your health', or 'laughter reduces stress' are often attributed, is as vague as stating that another vocalisation – that of speech, is good for your health,

[2] The current study did not include a quantitative analysis of this phenomenon, but it may be of interest for further study.

there are aspects of the laughter/health claims which may hold elements of truth. These elements do not justify overarching generalisations however. Both speech and laughter can be used as tools of communication. Quite obviously, speech can communicate in a more nuanced way such states as discomfort, ill-health, or indeed any situation which is troubling and one can indeed seek help and support through the use of speech. It does not however transpire that *all* speech is good for your health, nor is anyone likely to make such a bold and inaccurate statement.

Intriguingly, this is often the case when it comes to discussions of laughter. However, this point cannot be entirely discounted as either an artefact of poor research design or inaccurate dissemination of findings in a popular manner. People are often very comfortable with the notion that laughter is good for them, as was evident in my own research - “I truly believe that laughter is the best medicine by far.” Anon forum contributor

It must be acknowledged however, that even such vague principles as ‘laughter is good for your health’ do some service to the study of laughter, in that such proposals draw attention to the fact that people, as meaning makers, recognise that the apparently simple act of laughing is not merely a passive act, devoid of consequence.

The point here is not to attempt to prove that multitudes of people believe that all forms of laughter are good for their health. Rather, I wish to point out the emergence of a discovery in this study that due to an often-necessary tendency for laughter to be treated as a singular, or binary phenomenon in research, there is a strong related tendency for aspects of the behaviour of laughter to be held up as being representative of the entire gamut of laughter’s manifestation and influence. This tendency compounds the oversimplification of laughter. As the following chapters will show, laughter is not as simple as it may seem to be on first consideration.

Returning to the challenge of defining laughter, this is perhaps best answered in terms of the lens through which it is being examined. If this were a study of humour, I might state that laughter is an audible response to the presentation of a humorous event or incident. If it were a study of acoustics, I might state that laughter is a particular

vocalisation which displays a stereotypical fundamental frequency. If it were a study of linguistics, I might state that laughter is a form of punctuation.

Consequently, in investigative and review articles, the behaviour's scientific description is at times coloured by the particular paradigm in which the investigator is situated. For instance, in an example coming from a perspective which involved investigating potential therapeutic benefits, laughter is defined as a psychophysiological response, which comes with 'positive psychological shifts and a subjective emotion (hilarity)' (Mora-Ripoll, 2010a, p. 57).

Whilst it is intuitive that studying potentially therapeutic effects would lead one to focus upon positive shifts and hilarity, this definition may not be appropriate to someone researching schadenfreude induced laughter for example.

Meanwhile, the attentions of those who focus upon the learned aspects of laughter often centre upon such matters as the ability of the specific acoustic characteristics to alter the listener's affective state. Like Provine, they similarly understand the sound of 'typical laughter' as being 'best described as "huh-huh-huh"' and as having a song like, harmonic quality which fluctuates 'in a melodic way over the course of several bursts' and they expand upon the evolutionary perspective in that they propose that laughter is primarily a 'non conscious strategy of social influence.' (Bachorowski & Owren, 2004).

While clearly it would be doing the aforementioned investigators an injustice to imply that their understanding of laughter is in some way limited to the 'ha-ha, huh-huh' vocalisation, this is merely for the purpose of drawing attention to the starting point upon which they agree – the basic fundamental sound. Beyond that, explanations of laughter begin to diverge. This is understandable, given the varied social contexts in which laughter occurs and is employed.

Research of laughter has attracted interest and provided varied findings, at times contradictory, from such diverse fields as psychoimmunology (Berk, Felten, Tan, Bittman, & Westengard, 2001), physical health (Martin, 2002), anthropology (Musharbash, 2008), gerontology (Ko & Youn, 2011) and positive psychology (Devereux

& Heffner, 2007), to name but a few. Yet, despite the widespread interest in the topic, the aforementioned situated perspectives and interpretations have inadvertently ensured that it is a challenging undertaking to review the literature for the purposes of drawing an integrated understanding of such questions as: what is laughter and what purpose laughter serve in human interactions? It seems on first consideration that the answer is many.

Laughter, it transpires, is multifaceted, contextual, temporal, presents in a variety of forms and despite being typically associated with positive states, not all instances are related to joy or mirth (derisory laughter for example). Furthermore, and perhaps counter intuitively, laughter is not always in response to humorous stimuli and has been shown to occur most commonly in everyday conversation in response to such non-humorous statements as 'I see your point' or 'I'll see you guys later' (Provine, 2004).

However, as this is a grounded theory, each of these understandings of laughter presented above, along with any others which emerged, have been given some consideration in order to allow a common pattern to emerge. As such, the theory incorporates aspects of all forms of laughter to which I had been exposed during the research. The challenge was to find a pattern which linked these apparently disparate forms of laughter.

As mentioned in the introductory chapter, grounded theory does not require, or recommend the commencement of investigative work which depends upon a predefined research question. It is primarily an inductive approach to research. Whilst this broad approach may appear to be lacking focus, I would propose that the method of grounded theory allows for purposively sampling a wide variety of available resources through a process of judging, or deducing which topics of interest to follow when they emerge. Whilst a research question is not imposed upon the study, as theory development proceeds, there is a clear benefit to having a topic or topics of interest in the general field. As grounded theory requires that the researcher codes and analyses from day one of data collection, these topics can be deduced quite readily.

Therefore, beyond and in addition to exploring laughter in a general inductive sense mentioned above, the following areas took on a particular significance, both as a consequence of the early exploration of the field of laughter in general, but particularly as evidence began to emerge and memos began to point towards the following topics of interest:

1) As laughter appears to be so varied, can there be any pattern to laughter?
2) Given that people laugh more in some settings than other, what role does context play?
3) There are those who laugh and those who hear the laughter. Is there a similar pattern to the experience?

Once again, it is important to reiterate that these questions above are signposts which were led by the data, as opposed to being research questions as such. These were kept in mind as the theory progressed and evidence of interchangeable indicators were discovered. With regards to such discoveries, it has transpired that discoveries which arose later in the research process became fundamental to understanding the overall theory and as a result, it became essential to outline these concepts as a precursor to the laying down of the theory.

As a result, chapter 3 presents concepts which are necessary to explain from the outset, even though in the process of developing the theory, these concepts became apparent only after a great deal of data collection and simultaneous analysis had occurred. This is further evidence of the non-linear nature of a grounded theory. These concepts are split into two categories – the first being crucial terminology with direct reference to core aspects of the theory itself. These terms are ‘Discord’ and ‘Negotiate’. The second category being concepts of laughter nomenclature. These concepts – ‘Semi-reflexive’ and ‘Goal-oriented’ laughter relate to and follow on directly to the challenges laid out above with regards to the typological treatment of laughter. The terms negotiate and discordance are presented first, as they help to solidify the understanding of semi-reflexive and goal-oriented laughter.

3. Understanding laughter – Crucial concepts

The purpose of the current chapter is to introduce several concepts which are crucial to the understanding of the theory, before attention turns to the methods employed in chapter 4 and then expanding upon the integrative theory from Chapter 5 onwards. These concepts relate specifically to the meaning of the terms ‘discord’ and ‘negotiate’, as they relate to the theory.

3.1. Defining Discordance

In terms of a general understanding of discordance - a discordant state is indicative of a lack of harmony, and is characterised by conflict or disagreement ("Discordant," 2017). Of great significance to the current theory and somewhat counterintuitively, despite laughter being popularly associated with joviality and mirth, this common notion of discordance maps well on to the understanding of the types of incidents which are likely to evoke laughter.

This is not to suggest that laughter always represents an extreme state of conflict or disagreement. Rather, it is typically representative of a state which is disharmonious, but which is not so serious as to present a severe ongoing threat to the individual who is laughing. The conflict or disagreement could be as discreet as a subtle discrepancy between expectations and unfolding realities, such as a divergence between the intended meaning of an utterance and an unexpected reaction by a third party to that utterance due to a simple misunderstanding. The extent of manageable disharmony, or discord to which I refer is particular to each individual and this idiosyncrasy is a property of the individual's laughter range, a point which is examined in detail in chapter 5.

There are however, certain discordances which create a level of conflict which is manageable through laughter by a great many people. As will be portrayed later, not only do comedy writers and comedians recognise this phenomenon, with many building their living upon it, but so can the average person learn to take advantage of the tendency of people to laugh with some regularity in response to the mild psychological conflict caused by certain discordances, when applied in a context which supports the opportunity for laughter to occur.

These discordances may be called jokes, slapstick, goofing around, humour, or any label which represents a formal (yet sometimes covert) attempt to evoke laughter in oneself or others through the creation of, or by drawing attention to pre-existing points of discord. Sometimes these laughter provocation attempts work and successfully elicit laughter and sometimes they fail – even for professional comedians.

However, whether laughter appears to be contrived or reactive, timid or flamboyant, jovial or aggressive, it does not occur in a psychological vacuum and it is not always in response to an attempt to provoke laughter. As such, the multifaceted expressions of laughter are very much subject to random events and situational context.

Laughter can be instigated by an event which may be as substantial a discordance as viewing on YouTube a man painfully diving on to a pool of solid ice, clearly with the flawed expectation that he would easily break through to the water, or as trivial an occurrence which I recorded as an observation in the field, when a lady unexpectedly dropped the lid of a drink container and laughed for no apparent reason. Laughter can also occur at times of more intense emotional stress, such as with the aforementioned 'nervous laughter'. Yet, a slight tweak to the context of any of the above scenarios could lead to an entirely different outcome, devoid of laughter.

Central to the notion of discordance interacting in the instigation of laughter is the argument that the laugher must experience, or imagine an incident as being out of line, or in conflict with their desires, expectations and/or relative emotional state. Simply put, in the absence of an experience of discordance, it is highly unlikely that a reactive form of laughter will occur. As mentioned in the introduction to the current chapter, the purpose here is merely to introduce the notion of discord's relevance to laughter. This interaction is explored in much greater detail in Chapter 5 in a manner which incorporates it more thoroughly into the overall theory.

Finally, as mentioned earlier in the discussion of laughter typologies, since laughter can be produced for any number of reasons in virtually any conditions, this point does not necessarily apply to volitionally produced laughter. Such laughter can however be wilfully instigated in order to negotiate a point of discord. The use of the word negotiate is the subject of the following section.

3.2. Defining ‘Negotiate’

The use of the word negotiate is a deliberate choice which reflects the aforementioned statement that laughter is not an absolute resolution for all discordance. Prior to expanding further upon the content of the current theory, elaboration of the use of the word *negotiate* in the context of this grounded theory will be offered. Initially, however, dictionary definitions of the concept are presented:

Negotiate:

1.1: Try to reach an agreement or compromise by discussion ("Negotiate," 2016b)

1.2: Find a way over or through (an obstacle or difficult route) ("Negotiate," 2016a).

Whilst the definitions above do not directly fit the understanding of *negotiate* in terms of laughter, they do offer parallels. The first (1.1) having a social component and the second (1.2) indicating the management of a more general challenge.

Before examining the significance to laughter however, attention is drawn to the most salient departure from the relevance to laughter – specifically, that the inclusion of the word ‘discussion’ in definition 1.1 is not directly pertinent to laughter. Whilst many researchers have examined laughter in terms of the behaviour operating as a communicative, or signalling device (Bryant et al., 2016b; Truong & van Leeuwen, 2007), there are none (to my knowledge) who consider two or more people laughing together to be a discussion. Laughter can and does of course occur during shared experiences which can be interpreted to convey particular signals and it is broadly recognised as a non-verbal communicative component of linguistics (Ladegaard, 2013; Tanaka & Campbell, 2014), but it is not a form of discourse itself.

What is of relevance in definition 1.1 however is the early portion – ‘Try to reach an agreement or compromise’ ("Negotiate," 2016b). I propose that when laughter occurs during an interaction between two or more people, it can be an endeavour (sometimes consciously, sometimes unconsciously) to manage the outcomes of the social interaction.

3.2.1. Negotiating Interactions

As such, the first meaning of 'negotiation' in this theory (although not necessarily in order of importance) is that the act of laughing can, under particular circumstances, be considered to be a contributory factor in the ***management of the intrinsic complexities of social interactions*** through the adjustment of cognitive/emotional states. The discordances in social circumstances which laughing aids to negotiate are varied and multiple examples will arise throughout this thesis. For example, laughter in social interactions can fundamentally shift a person's emotional state from one of stress to one of joy:

> I feel that when people are in a group of people who are laughing, the energy and the dynamics of the group bring people along in the joy. (Anon forum contributor – Google alerts).

This notion will be developed throughout the theory, in particular in chapter 7, which the primary focus of is the negotiation of a variety of life's challenges through the use of laughter.

Attention is now drawn to the second meaning of 'negotiation' which has emerged as being an important aspect of the current theory.

3.2.2. Negotiating psychological obstacles or challenges

With regards to the second meaning, whilst it is not specifically mentioned in definition 1.2. above, it is understood that the dictionary definition refers primarily to physical obstacles. The second meaning of 'negotiation' in this theory however, refers in a more general sense to the ***management of psychological obstacles or challenges*** through the adjustment of cognitive/emotional states.

In this sense, laughter serves to negotiate a state of internal discord which may not necessarily be as socially focused as in the first meaning. This is a subtle difference, but one which acknowledges the differences between interpersonal and intrapersonal laughter. This point recognises the fact that people can and do laugh when alone. Individuals can also laugh to themselves whilst in company – an intrapersonal event in an otherwise social setting. A discordance could be entirely psychological, such as in the case of solitary laughter occurring whilst privately processing conflicting thoughts, or it could be a psychophysiological challenge, such as in the case of solitary laughter buffering the experience of pain.

For example, at the earliest stages of my research and in contradiction to my initially emerging thoughts that laughter may be an entirely social phenomenon, Patricia described in a research interview how she had collided with a glass patio door whilst in a solitary setting, and how she laughed out loud as a consequence.

In this case, there was no one else present and as such, the laughter was clearly not a social signal to an onlooker. When questioned on this point, she also reported that she was not thinking of what other people would think of her for having walked into the glass. Hence, the laughter could accurately be described as reactive to the private circumstances which she experienced at that moment.

Whilst Patricia did not offer any explanation for the laughter other than "it was funny", the combined evidence of this study has exposed a latent pattern, which indicates that laughter often occurs after tensions have arisen, and while some people explicitly state that they feel better after laughter, most are not prone to giving the laughter any further

conscious analysis. Laughter may well be obvious in its presentation, but its state shifting properties are not always obvious.

As an important aside, this particular incident contradicted my initial preconceptions that laughter is a primarily social phenomenon and it was troubling for some time during the research process, until the emergence of the discordance negotiation concept. As per the experiences and teachings of Glaser & Strauss (1967), not all processes are evident to the participants in the action scene, yet the researcher can make sense of them with the benefit of a broad grounded evidence base.

My proposal, which is further supported by data which will be expanded upon later, is that when laughter performs the function of negotiating psychological and/or physiological discordances, people do not need to be and often are not cognisant of its effects, no more than people need to analyse why it was that they withdrew their hand from a hot surface[3].

As will become apparent, with the benefit of the grounded supporting evidence, it can be surmised from the above example that Patricia's laughter implicitly served the purpose of negotiating the minor emotional tension and cognitive disparity associated with the surprise of the trivial accident in her case. The sound reasoning behind this inference becomes more evident as the theory develops through chapters 5, 6 and 7.

Finally, the use of the word *negotiate* in this theory acknowledges that laughter may not always solve the problem of discordance. After all, not every negotiation ends in a harmonious agreement. Laughter does however, help to process discordance, which can lead to a variety of potential changes in the world of the laugher and often in the perceiver(s) of the laughter.

In summary, this theory will lay out an argument which suggests that laughter is a negotiation of discordance from two perspectives. From one perspective, laughter offers a means to work through a difficulty, such as a psychological obstacle. From another

[3] This is not to suggest that laughter is reflexive in the same sense of withdrawal from a painful stimulus, a point which was discussed earlier.

perspective, laughter serves to help people negotiate challenging aspects of social interactions.

3.3. Multidimensional approach to laughter

Having considered in the preceding chapter the value of a typological treatment of laughter in terms of usefulness for application in the current study, it has emerged as being more helpful to consider laughter as a representative term for a multidimensional dynamic group of behaviours which are socially conceptualised as the single behaviour 'laughter'. These behaviours can in theory range in presentation from being a seemingly uncontrollable, semi reflexive outburst, such as laughing hysterically at joke, to being a higher order deliberate and cognitively advanced strategic vocalisation and embodied action, such as feigning amusement for the sake of another's ego, or conversely, to ridicule another.

As mentioned above, whilst useful at times, in terms of this grounded theory, focusing upon a typology of laughter poses challenges. This is since any one, or a combination of ranges of reactive to strategic laughter, delicate to exuberant vocalisation and slight to intense bodily movements have potential to occur throughout one single interaction. These differences are dependent upon the factors which are most salient, implicitly and explicitly, to the laugher from moment to moment.

As the current study does not incorporate an experimental paradigm, pinpointing these momentary changes with any degree of accuracy would be challenging and of limited benefit in terms of seeking wider, overall patterns. Essentially, in the absence of tightly controlled and managed experimental parameters, laughter can deny the benefits of clean, predictable configurations which more stereotypical behaviours such as sneezing offers to the development of a straightforward definition (Ghayourmanesh, 2017). Indeed, during the period of naturalistic observations undertaken in the current research, attempting to categorise laughter events into typologies did not emerge as being a fruitful endeavour from the perspective of developing a grounded theory of the behaviour.

Laughter's multivariate nature is more akin to a fuzzy concept than a neatly definable behaviour with dependable properties and while headway is being made in terms of multi-modal approaches to laughter measurement and classification, there is some distance to go yet (Cosentino et al., 2016). I do not claim to have discovered the solution

to this problem, but Cosentino et al have certainly brought the field forward in that regard by means of their comprehensive survey of objective measurement methods (2016).

It is my position therefore, that laughter is a term which encompasses a group of behaviours which typically share a comparable set of explicit acoustics - a broad range of ha, ha, ha type sounds (although there is great acoustic variability and some people describe internalised laughter), a range of associated visual features, such as smiling (although some laughter may not include a smile, e.g. sarcastic/ironic laughter), with accompanying expressive bodily movements and often (but not always) an emotional mirthful aspect, which, despite such variability, together make it distinctly recognisable to observers.

As this study incorporates data mined from numerous online sources, which were not under the control of the researcher, I have made what I believe is a reasonable assumption that those who have discussed laughter are confident that they have accurately recognised, in one form or another, that which is meaningful to them as an expression of laughter. With regards to my own primary sources, such as interviews and forum discussion, the same understanding has been applied. When I have discussed laughter with participants, I have done so with the appreciation that they are presenting their understanding of the meaning of laughter which occurred to them in the context within which they recalled it in the interview, or forum discussion. What I have sought to hone in on is not the individual's 'voice', but the conceptual patterns which have emerged across such diverse indicators, or incidents.

With these points in mind, I wish to repeat at this juncture that when it is necessary for me to refer to a particular form or degree of laughter in this thesis, such descriptions are always offered with the caveat that one form of laughter can morph into and overlap with another form – sometimes without either the perceiver, or indeed the laugher themselves being consciously aware of the transition.

I also wish to point out that when discussing the dynamic behaviour of laughter, there are occasions when categorisations of laughter are helpful and necessary, with the general conceptual categories of *Semi-Reflexive Laughter* and *Goal-Oriented Laughter* having emerged as being the most useful terms to differentiate between patterns of

laughter behaviours. These categories are encompassing, in that they have the conceptual power to contain all forms of laughter and yet, they prevent over-fracturing of the concept into endless laughter typologies. I will provide an introduction to these categories of laughter in the following several pages, but they will be integrated in more detail into the wider concepts of the theory in the following chapters.

The notions of semi-reflexive and goal-oriented laughter allow conceptual room for the exploration of the dynamic factors leading to the instigation of a bout of laughter, the intended/or unintended purpose of such laughter and finally, the interpretations and consequences which emerge as being relevant to the audience to the laugher and the laugher themselves. This is done without resorting to detailed description of each individual incident. Describing laughter rigidly in terms such as joyous, or sarcastic may run the risk of missing the rich contextual background which encompasses the laughter by introducing an inadvertent bias.

When examples of incidents of laughter are given throughout this thesis, they are chosen with the intention of fleshing out concepts which have been developed through a process of constant comparison of incident to incident and concept to concept, rather than suggesting that such examples provide verification of fact. With these points in mind, I now wish to clarify what is meant by the two general categories of laughter which emerged as being salient.

3.3.1. Semi-reflexive laughter

The term ‘semi-reflexive laughter’ arises from the theoretical proposition that the vast majority of typical laughter occurs in conjunction with some level of filtering, such as cognitive processing and the integration of learned behavioural norms. Even apparently spontaneous, or apparently reflexive laughter is prone to some contextual configuration. It is proposed that even at the most basic level, for typical laughter to occur, there must be a psychological experience of a point of discord. The experience of laughter inducing discord may be as obvious as a joke, or it may be subtle to the point that the individual themselves may not recognise what the trigger for their laughter was.

This phenomenon of subtle discordance is particularly salient in situations in which individuals are nervous and find themselves laughing, despite no discordance being apparent to them. The point of discord which triggers laughter in such situations is often emotional discomfort and, in many cases, an expectation then arises that uncontrollable laughter is about to occur as a response. This often manifests as a loop situation in which the individual’s own thoughts about not laughing become the point of discord which feeds more laughter.

> Sometimes I laugh when I'm nervous. It starts as an almost non-existent chuckle, then *because I feel like a moron* [emphasis added] and try so hard to calm myself, it escalates and I feel pathetic: a grown adult and I can’t control my laughter. (Anon forum contributor – Google alerts)

The unfortunate consequence of such situations is that the behaviour of laughter, while it is indeed processing an emotional discord, is not serving the individual in a positive way, as the individual themselves deem their laughter to be a negative behaviour. This, in turn, can cause greater emotional distress. As will become apparent throughout the development of this thesis, under normal circumstances, the power of the contextual situation is enough to configure an individual’s response to nervousness in a manner which does not lead to laughter in situations in which laughter may make matters worse. Skills are typically honed throughout the lifespan which allow one to maintain a level of control over outbursts of laughter. The means by which one’s skills in this regard are mastered is the subject of **section 6.3 *Life span development and learning*.**

For most, this control is implicit and operates below conscious awareness. For others, conscious techniques of control are required. Indeed, it was noted in the analysis of an online conversation about how to control unwanted laughter, that people describe how they, as long-time sufferers of 'nervous laughter' have adopted new techniques for distracting themselves from the associated stress, such as by biting their lip as an alternative to laughter.

> I try so hard [to control laughter], I once even made my lower lip bleed cuz I was biting so hard. (Anon contributor – Yahoo Answers)

Alternatively, another technique is to focus attention elsewhere:

> Back when I was in school I used to try really hard to just stare at my desk, or pick one thing that I knew would not make me laugh and try to focus on that only, so my eyes wouldn't get caught on something else I think is hilarious (Anon contributor – Yahoo Answers)

Not all 'semi-reflexive' laughter is associated with laughter which is commonly referred to as 'nervous laughter', although the experience of discord suggests that there are similarities across all laughter in this category. In contrast to semi-reflexive laughter which fails to negotiate discord in a beneficial way, it is proposed that when laughter does serve the individual in a positive fashion, such laughter acts primarily as a fine-tuning, emotional recalibration device, which negotiates perceived discordance by shifting the laugher's emotional state towards a state of equanimity. As Sam, a stand-up comedian who contributed to the research put it in an interview:

> I'd say it [laughter] can definitely restore balance. I suppose if you look at what's going on in your mind, it's like one of those sand pictures, where if you shake it up with a good laugh, everything settles down for a while. (Sam)

This theory proposes that such laughter serves its purpose well. So well in fact that we don't just reach a state of homeostasis after laughter. Laughter can make us feel good – psychologically and physically. (I term this subjective feeling of laughter related well-

being the *Emotional Overflow Effect*. See **Chapter 7, section 7.2.4** for further discussion.)

Understandably therefore, we have learned to associate laughter with enhanced mood and well-being. It is proposed that the perception of these enhancing features has resulted in a transmutation of laughter's function of internal discordance management to that of goal-oriented laughter, the concept which is the topic of the following section.

3.3.2. Goal-oriented laughter

Operating in a manner which is somewhat less restricted by an individual's implicit responsiveness to extrinsic context is goal-oriented laughter. This reduced restriction applies simply because one has the freedom to produce such laughter at will, at any time, for no particular reason if desired, whereas semi-reflexive laughter is more response driven. Goal-oriented laughter is primarily (but not exclusively) emitted with an externalised, or socially interactive purpose, but it can also be emitted for the benefit of the self, as will be discussed below.

The extent to which the purpose of such laughter is implicitly, or explicitly in mind when it occurs is a challenging point to unravel. However, it is proposed that as with semi-reflexive laughter, when such laughter does occur, it is typically being used to negotiate a discord of some form (such as an awkward social situation) and as with semi-reflexive laughter, the extent of variation in this discord is a matter of degrees.

Furthermore, it is suggested that goal-oriented laughter is as much a cognitive frame shifting tool as it is an emotional one. By this I mean that the laughing individual seeks to negotiate discord by volitionally producing laughter in order to influence the cognitive and/or emotional state of the self or others. An example of such a laughter supported goal might be laughing with the intention of distracting another person – a technique which was discussed with reference to an online forum query regarding 'blatant laughter'.

> When I was dancing, she would blatantly burst out laughing, or she would whisper things really loud into another person's ear while watching me. She even talked out to me about a certain way that I was doing my dance and laughing so everyone could hear. Although it distracted me, I just looked her way and laughed it off and then kept dancing (Anon contributor – Yahoo answers)

It is of course a point of detailed discussion as to whether, or to what extent cognition and emotion can be separated in a general sense (Power & Dalgleish, 2008). Due to the qualitative nature of the data, the difficulty of separating cognition and emotion in terms of the understanding of laughter is beyond the scope of the current theory. However,

there are times throughout the thesis when aspects of the data point towards such distinctions and when this occurs, the particular domains are explored.

Whilst each of the words ‘fake’, ‘feigned’ and ‘volitional’ (Buchowski et al., 2007; Lavan et al., 2017; Reysen, 2006) are used in extant theory which relates to the study of that which I categorise in a general sense as goal-oriented laughter, these words can be somewhat restrictive in terms of allowing room to tease out the intentionality of such laughter. The words fake and feigned in particular carry negative connotations which could be undeserved, when one considers the vast array of uses for goal-oriented laughter, including the strategic use of such laughter to smooth social interactions.

The discord in question in such circumstances may well be less obvious than it might be in comparison to the discordance incumbent in a situation which might instigate semi-reflexive laughter. However, that is not to suggest that the discord being negotiated is any less important than that negotiated by semi-reflexive laughter.

For instance, the point of discord may be as subtle as a desire to ingratiate oneself to another. An example is laughing at an employer’s unfunny witticisms. The discord is not contained in the joke itself (which fails to elicit laughter), but in the imbalance of power in the relationship and the desire to avoid insulting the more powerful party.

> This type of laughter comes in handy when your boss tells you a dumb joke and you have to laugh to make them less likely to fire you. (Anon forum contributor)

Essentially, in cases of goal-oriented laughter, it is proposed that the laugher attempts to make circumstances more favourable for either:

A: The laugher themselves

(e.g. feigning laughter to mock and thereby disempower a competitor)

B: The audience to the laughter

(e.g. feigning laughter to please a child)

Or

C: Both

(e.g. feigning laughter to pretend a joke was humorous, thereby avoiding mutual embarrassment)

With regards to point A, goal-oriented laughter is not limited to negotiating relations with the other, as it has also been manipulated to intentionally influence the state of the self. This is particularly evident in Laughter Yoga (Kataria, 2010a) and similar 'laughter meditations' which have occurred as spin offs. In an interview with a laughter yoga instructor, who used to practice as a medical doctor, the following claims were made with regards to the apparent benefits to the individual to partakes in the practice:

> There are two levels of benefit. One is, people who don't fall sick, it means preventive, you don't fall sick. We never fall sick; we are in a good mood all throughout the day. We are in a good state of mind. The second aspect of health is healing, so if you have any chronic health, or any illnesses, laughter yoga improves your health condition and helps you to heal faster, by strengthening the immune system and lowering the stress level. If your stress levels are down and your system is strong, you can heal much faster from any current diseases. I don't say that people can become 100% free, but as a medical doctor, I understand that 50% is organic, due to some cause, but the other 50% is a mental part, which can easily be taken care of with laughter yoga. So, if even long-term painful diseases, chronic diseases, you laugh and 50% of your symptoms disappear, because 50% of every illness is mental. (Dr. Fitzmaurice – Interview participant)

Laughter Yoga operates on the basis of 'fake it 'till you make it', whereby groups of people meet up and begin to laugh out loud, with the ultimate goal of reaching a point at which their laughter is described as switching to "real and contagious laughter" (Kataria, 2010a, p. 15). Practitioners of Laughter Yoga have attributed many psychological frame shifts to the practice, including, but not limited to, enhancement of positive mental attitude and self-confidence, stress reduction, and even academic performance (Kataria, 2010a, pp. 17-20).

A more recent phenomenon which challenges the proposition of goal-directed laughter being entirely social in nature, albeit it in a rather peculiar way, is an adaptation of the original Laughter Yoga concept of laughing in groups. This adaptation is intentional solitary laughter. The solitary laughter exercise involves an individual laughing (out loud, or quietly) without the need for, or use of any external stimulus, such as humour.

This form of laughter is best thought of as a dramatic acting out of laughter and while some may describe it as being merely analogous to 'genuine laughter', if it serves a purpose for the laugher, and it looks and sounds like laughter, then it is no less 'real' than any other form of laughter. It is simply the case that this use of laughter is one which we are not particularly accustomed to. While this intentional solitary laughter may not have a social aspect to it, it clearly remains goal-oriented, in that the practitioners of Laughter Yoga and associated practices promote the idea that it enhances well-being (Rivest, 2012).

> It [laughter yoga] is based on scientific studies that show that the body cannot tell the difference between "real" or "fake" laughter, you get the same health benefits to your body and mind. (Rivest, 2012)

Unfortunately, Rivest doesn't supply details of the scientific studies which verify the claims of the body being rewarded with the same health benefits, no matter what the laughter type. Nor does he provide any details of the studies which verify what the apparent health benefits are. However, the conceptual point remains intact – this particular laughter is being used with a set goal in mind.

In summary, goal-oriented laughter differs from semi-reflexive laughter primarily as the latter can occur as an unintentional and semi-reflexive response to a stimulus, albeit a filtered response, whereas goal-oriented laughter is proactive and as such, could be considered to be a regulated strategic behaviour to a greater degree.

Having introduced the concepts above of goal-oriented laughter and semi-reflexive laughter, there remains a further conceptual point which requires an introduction before presenting the theory in chapters 5, 6 and 7. This remaining point of consideration is the potential for overlap when one attempts to categorise laughter. In this regard, attention is now drawn to the blurred lines of laughter, the topic of the following section.

3.3.3. Blurred lines of laughter

To further complicate matters and in recognition of the multidimensional reality of laughter, as the example above of laughter yoga switching from laughing out loud for the sake of it to 'real and contagious laughter' shows, laughter can morph from one form to the other during a single event. Importantly, as the recurrent use of the term 'negotiate' throughout this thesis suggests, it does not necessarily follow that laughter which falls within either the semi-reflexive, or goal-oriented categories will provide favourable circumstances for all parties.

Consider the example of goal-oriented laughter which is intended to mock or belittle another. In such a situation, power is being negotiated and it is highly unlikely that such conditions will be favourable for both parties. Indeed, such laughter can cause lasting pain.

> They began laughing at me, telling me I was useless, hopeless, stupid, pushing their pointer finger into my chest, with their head back, laughing loud and angry laughter, while berating me at the same time, laughter and vile words, a dreadful combination. [The hurtful thing was] laughter filled with hate, laughter as a weapon, laughter and hate and being ignored by others who I thought might intervene. (Bernie)

Bernie described how it took her a great deal of time to come to terms with the experience she described. Clearly, she was unequivocal about the intentions of the perpetrator of the 'angry' laughter in the scene above. To her, the intention was clear, as was the impact. However, as mentioned earlier, it is not always the case that the audience to laughter can accurately surmise what the intention behind another's laughter might have been.

This is not to devalue Bernie's experience, as she is undoubtedly the best judge of how the laughter made her feel. However, even in cases such as that described above, the lines can blur between semi-reflexive and goal-oriented laughter, for it is typically the interpretation of the audience to the laughter which defines the extent of the impact of such laughter and it is the impact which typically leads to the labelling of laughter as one form or another.

Conversational laughter is an ideal example of laughter which appears to be semi-automatic in nature and is likely to be a hybrid of two forms of laughter occurring simultaneously. This notion is supported by my own casual observations of conversations incorporating laughter taking place, but more empirically by large scale observations by Provine (2000) of naturalistic pre-laughter comments and by the work of conversational analysts, such as Glenn (2008), who describes conversations in which laughter is used regularly as a punctuation device. Such laughter is not necessarily in response to a joke, or humorous comment, although that can also occur in a single interaction which incorporates laughter as a punctuation device.

Furthermore, consider semi-reflexive laughter in response to witnessing a pedestrian collide with a lamppost for instance. Some people might rush to the aid of the injured party, while others may laugh. However, as cruel as it may seem, such laughter can be devoid of cruel intention, with the true and implicit purpose being an emotion shifting response to an event which disrupted the onlooker's reasonable predictions that a person does not typically walk into large, highly discernible objects.

> I know it's bad, but I just couldn't help myself. I witnessed a poor unfortunate man walk smack bang into a lamppost today. I was on my own when I witnessed this and ended up bursting out laughing. He wasn't badly injured of course…If I had done it to myself, I would be laughing too. I would like to make myself feel better in believing that the majority of people would have had the same reaction. You've been framed wouldn't exist otherwise. (Milly – Managed forum participant)

However, it is perfectly reasonable that from the perspective of the injured party, such laughter could be interpreted as ridicule and could consequently be very hurtful to the person being laughed at. They could understand such laughter as goal-oriented.

It is for these reasons that when examining laughter and its consequences in the current study, I do so, not through an experimental lens, in an attempt to narrow in on one aspect of laughter, but through the broader lens of what factors are embedded in the contextual situations which surround the laughter.

As will become apparent in the forthcoming chapters, consideration of these broader factors aids in the expansion of the understanding of laughter beyond that of a limited stimulus/response mechanism. Indeed, contextual factors have emerged as being of fundamental importance to the understanding of laughter. The role of context is of particular relevance to the notion that laughter is configured (Chapter 6). However, prior to further elaboration and application of the preceding concepts of negotiation, discordance, semi- reflexive laughter and goal-oriented laughter into the theory, I now wish to offer an exploration of the epistemological reasoning behind the chosen methodology and how the methods were employed to build the theory.

4. Methods

Introduction

The following chapter offers details of the methods which were implemented in the current research, commencing with the methodological choice and followed by the practical methods which were employed.

It was the aim of the current study to use grounded theory methods, incorporating the approach that “all is data” (Glaser, 2001, p. 145) to uncover patterns in grounded data which elucidate not only what is going on in the real world when people laugh, but what problems laughter is processing when it occurs. The area under investigation was open to any situation in which laughter was found to occur.

The grounded theory methodology is an experiential approach to gathering and analysing data for the purposes of theory development. It primarily offers an inductive method which is cyclical, rather than linear, in that data is not gathered first and analysed later. Rather, the data is continuously analysed from the outset and this analysis provides the researcher with the opportunity to construe from the data where to go next with the investigation.

Data collection and analysis are integrated activities in grounded theory development; thus, the data collection stage and open coding stage occur simultaneously and continue until the core category is recognised/selected. This combined data collection/data analysis process results in a constantly evolving and developing set of categories and concepts, which ultimately result in the emergence of the core category, which is linked to each sub-core concept. This is an iterative process in which data collection and analysis methods inform each other and ultimately promote conceptual development.

As was mentioned in the introductory chapter, the current study is not a deductive study in the sense that a research question is not reasoned prior to the implementation of the study. Elements of deduction do however provide direction throughout the theory development, in that the researcher must decide where to go next with data collection

on the basis of the patterns which are induced from the constantly compared and analysed data, thereby exposing the interchangeability of indicators (Glaser, 1998). This deduction of a direction for relevant data is theoretical sampling in action, with the goal being to achieve theoretical saturation, an aspect of the grounded theory approach which offers a level of confidence as regards the strength of the emergent concepts.

Indeed, so confident is Glaser of the effectiveness of the grounded theory approaches of constant comparison, theoretical sampling and theoretical saturation, that he believes that if a grounded theory is operationalised correctly, that it is by extension protected from the risk of 'reification' of what he calls 'conceptual jargoned thought' which, he states, can contaminate research which depends upon pre-framed research questions and concepts (Glaser, 2011, p. 63). This reification as an inherent risk which challenges the validity of such research. Grounded theory, however, offers the researcher the opportunity to follow a formalised set of procedures which paradoxically 'lead to very flexible, not fully controllable, non-formalised research', which on a conceptual level 'produce with validity what is emergent' without the need to remain 'stuck' in the data (Glaser, 2011, p. 64).

In his (2011) book '*Getting out of the data, Grounded Theory conceptualization*', Glaser cites an anonymous 'QDA doubter' who wrote to him to suggest:

> It must be possible for the researcher to demonstrate to the reader a pathway through his data showing how the raw data emerged to become a core variable. The GT reader must be able to readily understand how and why the constant comparison process was operationalised. (Anonymous source as cited in (Glaser, 2011, p. 64))

In response, Glaser describes this view as 'wrong thinking' and he goes on to suggest that:

> Absolutely there is no need to verify the validity of GT conceptual codes by evidencing it with data, this is too verificational as if the research goal then becomes a QDA description, not a conceptual theory (Goulding, 2002).

Glaser does not see qualitative descriptive analysis as an inferior method. Rather, he sees it as an alternative method to grounded theory and using qualitative methodological approaches for verification of validity is deemed an unnecessary and unwelcome remodelling of grounded theory. For Glaser, the validity of concepts is in their inductive emergence, not in their presentation as an audit of individual datum.

However, it was decided, after deep consideration of Glaser's approach and the alternative approach of authenticating the progression from raw data to theory, that presenting the procedural implementation of the methods used (i.e. how concepts formed from raw data) after the theory had been generated was not going to damage the conceptual nature of the current grounded theory, which already existed. The evidence of the progression from raw data to concepts exists, so it seems to this researcher that providing such evidence enhances, rather than damages the validity of the current study.

On this basis, the remainder of this chapter provides an overview of the path which the research took in response to emerging patterns and concepts. When helpful for the purposes of illustrating these methods in action, examples are interwoven which demonstrate how the various types of raw data (incidents), which indicated particular concepts, were compared to each other in order to develop these concepts and how, in turn, the emergent concepts were compared to each other to develop the core concept and ultimately, the overall theory. Whilst this approach presents some raw data, it is not intended to be a presentation of results, or findings – such data is merely intended to provide a visible structure to the means of analysis.

The data referred to above was collected through the following channels:

1) Field notes (Naturalistic observations)

2) Harvesting existing publicly available raw data (Naturalistic web-based discussions & targeted topics)

3) Purpose built and manged online discussion forum

4) Interviews

5) Incidental data (e.g. conversations)

6) Extant Literature

The precise means by which these data were gathered, in addition to the reasoning for these choices and the inclusion of particular participants is explored in **Section 4.1.1 Procedure.** Following this, the means of coding and analysis are detailed, both from the perspective of how grounded theory describes this process and also from the perspective of how it occured in a practical sense in the current research. However, prior to expanding upon the practical measures of the implementation of the method, attention is drawn to the underlying ontological and epistemological influences behind the practical choice of method which was detailed above.

4.1. Methodological choice & epistemological considerations

Positioning one's research within a particular paradigm may be interpreted by observers as evidence of the ontological and epistemological positions of the researcher. This statement suggests that as researcher, one's personal inclination towards a particular perspective of the world is the primary force driving methodological choices. Indeed, it has been suggested that, "To ensure a strong research design, researchers must choose a research paradigm that is congruent with their beliefs about the nature of reality" (Mills, Bonner, & Francis, 2006, p. 2).

Furthermore, as Cohen, Manion and Morrison (2000) state in their discussion of research methods:

> Ontological assumptions give rise to epistemological assumptions; these in turn give rise to issues of instrumentation and data collection. This view moves us beyond regarding research methods as simply a technical exercise; it recognises that research is concerned with understanding the world and that this is informed by how we view our world(s), what we see as the purpose of understanding. (Manion et al., 2000, p. 3)

Prior to undertaking the current PhD research, experiences which will have readily influenced my own ontological and epistemological assumptions are my undergraduate B.Sc. in psychology and more recently my undertaking of a M.Sc. in applied psychology. Whilst both experiences will have offered opportunities to experience and undertake quantitative and qualitative approaches to research, it was the B.Sc. which provided the most potent influences upon my ontological and epistemological beliefs. In-depth exposure during the degree to what was is described as 'critical' social psychology, offered a counter-position to an earlier reliance which I may have had with regards to the quantification of aspects of human behaviour through experimental data (Hollway, Lucey, & Phoenix, 2007).

In a reflexive sense, I acknowledge that this exposure did influence my understanding of reality, in that I developed a world view which was not reliant upon a quantifiable 'truth', but which acknowledged that while aspects of the world and human behaviour are quantifiable to a certain degree, so too is human behaviour subject to contextual and

subjective interpretations. However, this experience did not result in an either/or understanding of which research paradigm should take precedence.

Rather, as a PhD student who has chosen a classic grounded theory approach for the current research, I wish to propose that practical choices can also play a valuable role in ultimately undertaking a particular approach to research, without necessarily being reliant in a fixed manner on a philosophical stance with regards to methodology. The evolution of the approach to the current research is an example of this pragmatism.

Indeed, as was discussed in the introductory chapter, the precursor to the current study was an intention to carry out empirical research, consisting of a series of experimental studies, which were intended to investigate the apparent efficacy of laughter (or lack of efficacy) to influence the psychological well-being of participants under particular conditions. This initial positivist approach to the research suggests a leaning towards an underlying ontology of realism, which reflects a belief that absolute rules maintain social reality.

However, as the current thesis unfolds, it will become evident to the reader that the research reflects a perspective in which multiplicity, context and social experience are paramount to understanding the topic under examination. However, this 'relativist' ontology, in which "the world consists of multiple individual realities influenced by context" (Mills et al., 2006, p. 2) was not one which was imposed upon the research from the outset. Rather, through the grounded theory process, this emerged as being most salient with regards to the phenomenon of laughter.

This is not a flip/flop from one ontological position to another, or a conscious transfer from an epistemology of objectivism to one of subjectivism on philosophical grounds. Rather, it is an indication that I, as researcher, chose to employ a methodology which I believe offers the most apparent benefits with regards to the subject matter under investigation. As Glaser states:

> GT [grounded theory] is not an either/or method. It is simply an alternative to positivistic, social constructionist and interpretive QDA [qualitative data analysis] methods. (Glaser, 2001, p. 2).

As such, the decision to use grounded theory made particular practical sense from the perspective that it is an approach which is not wedded to one form of data or another. Indeed, Glaser (2003) explains that the method is a general one, which "can be used with any type of quantitative data or qualitative data or combination thereof" (Glaser, 2003, p. 83). Whilst some have attempted to situate grounded theory within a social interactionist paradigm (Charmaz, 2006; Goulding, 2002), Glaser takes issue with such assertions, insisting that:

> GT is just a relatively simple inductive model that can be used on any data type with any theoretical perspective. It is just a general inductive model, or paradigm, if you will, that is sufficiently general to be used at will by any researchers in any field, any department and any data type…No one theoretical perspective can possess it. (Glaser, 2005, p. 4)

Furthermore, I acknowledge that pragmatism contributed to the methodological direction of the current research, not only from the perspective of the choice of a grounded theory methodology in a general sense, but also with regards to the latter conviction to remain loyal to the classic, or 'Glaserian' grounded theory approach, rather than another version of it, such as the 'evolved grounded theory', as described by Mills et al. (2006, p. 3), which had been developed by Strauss and Corbin in later years (1997).

In his discussion of the roots of grounded theory, Glaser (1998) states that the original grounded theory was written up in '*Awareness of Dying*' (Glaser & Strauss, 1966) yet, the first guide to the methodology was not formalised until the publication of 'The discovery of grounded theory: strategies for qualitative research' (Glaser & Strauss, 1967). Decades later, Glaser's co-author Anselm Strauss collaborated with Juliet Corbin on what they perceived as a more explicit procedural guide to undertaking grounded theory (Strauss & Corbin, 1990). This was the beginning of the 'evolution' referred to above by Mills (2006).

However, for Glaser, this was less an evolution and more of a radical and unwelcome divergence from the original methodology. Glaser stated that Strauss and Corbin's book "misconceives our conceptions on Grounded Theory to an extreme degree, even

destructive degree" (Glaser, 1992, p. 1) and that since the direction taken by Strauss and Corbin was not grounded theory, it should be relabelled as a different methodology.

Despite Glaser's assertion above that grounded theory is "just a relatively simple inductive model" (Glaser, 2005, p. 4), the practical challenges of learning and implementing the methodology and associated methods were compounded by the fact that the learning curve is steep and experiential to a large degree. The experience of this researcher is that doing grounded theory is not simple and after much detailed reading of the method, it was time to 'trust' the implementation of the experiential method through application. Glaser summarises the method in the following paragraph:

> Trust in emergence by starting to constantly comparatively analyse the data the first night after field notes are collected. Look for interchangeable indicators in the data as it is collected, as it is gathered, while using the constant comparative method. Once the pattern, latent in the data, is found and indicators are saturated, name the pattern and conceptualization begins. Soon more patterns emerge and memos start relating them and a multivariate GT starts emerging around a core category. (Glaser, 2011, p. 1)

Glaser's summary above is a helpfully succinct, yet deceivingly concise description of the method. However, the paragraph above provides an excellent introduction to the following section, in which the means by which the research was operationalised is laid out in practical terms.

4.1.1. Procedure

Ethical approval was sought prior to the commencement of data collection and this approval was received from the Trinity College School of Psychology Research Ethics Committee (Appendix 1: Ethical Approval).

The nature of the data collected in the current research consisted of multiple forms, as presented below (although not necessarily in chronological order).

1) Field notes (Naturalistic observations)
2) Garnering existing publicly available raw data (Naturalistic web-based discussions & targeted topics)
3) Purpose built and manged online discussion forum
4) Interviews

The following chapter will initially detail the procedure involved with regards to the sampling of data in **Section 4.1.1. Procedure**. Subsequently, in **Section 4.1.2., Coding, Memos and Analysis**, the attention turns to the methods of coding and analysis. This section also elucidates the means in which each of the above sources of data fed into each other in terms of a cyclical analysis process.

4.1.1.1. OK Field notes and Memos

The research began with the premise that 'all is data' (Glaser, 2001, p. 145) and a period of unobtrusive observations of laughter occurrences in naturalistic settings was undertaken as the first step in data collection and early theory formation. However, as is a central principle of grounded theory (Glaser, 1978), memos commence on the first day of data collection. Memoing is therefore a crucial aspect of the procedure of a grounded theory study. Accordingly, alongside the gathering of field notes, memoing also commenced (and indeed was maintained alongside all other forms of data collection).

Memoing is an unrestricted process which aids the researcher by promoting freethinking and consequently a deeper evaluation and consideration of all aspects of the emerging theory. According to Glaser "Memos are the theorizing write-up of ideas about codes and their relationships as they strike the analyst while coding" (Glaser, 1978). These memos, which are essentially notes kept in a notebook (separate to the field notes in this case), feed in to the coding and conceptualising process in a cyclical manner and can inform and guide theoretical coding. Memos can themselves be coded as they are also treated as data.

In my own case, I produced several handwritten notebooks of memos, the contents of which covered a broad scope of topics, including methodological memos. These handwritten memos were coded and scanned into the Microsoft OneNote programme for easy access and ease of comparison with other memos, categories, properties and codes. A visual representation of the cyclical process involving the role of memos is offered in Figure 1 below:

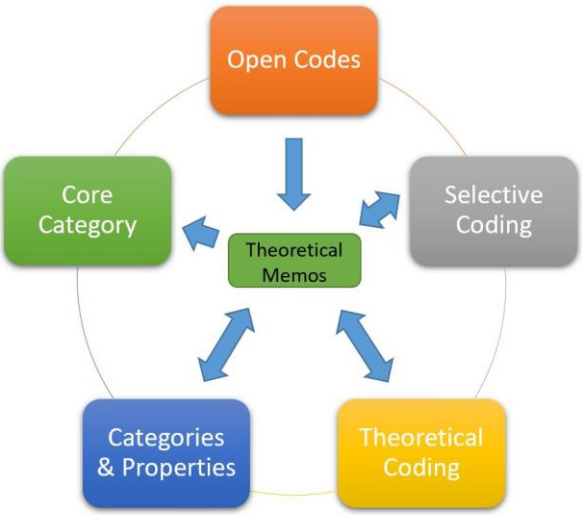


Figure 1: Cyclical Nature of Memos

The specifics of the coding processes which are displayed above in figure 1 will be expanded upon later, in **section 4.1.2.** So too will the specifics of the memoing process. However, for now**,** the focus remains with the procedure of field note collection.

Inspired by the observational work of Robert Provine with regards to the research of laughter in naturalistic settings (Provine, 2000), it was decided early on to take a basic approach to this aspect of the initial data collection. Provine and a team of his students had "eavesdropped on the conversations of anonymous laughing people in public places" (Provine, 2000, p. 25) for a period of a year.

However, the current research did not set out to record conversations, but to observe general laughter behaviours in an informal manner. This included spending time in public places and taking note of what actions bracketed audible laughter events. Whilst some observations were made during times which were specifically set aside for the purpose of waiting for incidence of laughter to occur, many observations were made at unexpected and incidental times. Indeed, this became the predominant method of gathering such observations.

This was done by simply carrying a small notebook at all times and writing down the basics of what I perceived to have occurred at the time of any laughter event that I happened upon. The reasoning for this change to the procedure was quite simply that one could sit in one space for an extended period of time and witness very little laughter, or sometimes none at all. However, in one's typical everyday movements, which in my

case involved regular movement on foot around Dublin city, laughter can spontaneously occur amongst those who are nearby. The reliable presence of a notebook and pen made recording incidental events a straightforward procedure.

There was no precondition of predetermined concepts such as seeking out conversational, ‘fake/genuine’, ‘Duchenne/non-Duchenne’. Laughter was simply observed as it occurred and was audible to the researcher, and field notes with accompanying memos were taken which attempted to portray the basic circumstances which surrounded the laughter. No audio or video recordings were made. These observations were intended to be supplemental to the broader study and they were never intended to be any more than a launching point in what was to be an open, exploratory study.

However, it transpired that whilst the observations were useful to a degree, they were not providing any more than a cursory introduction to the phenomenon of laughter, and so the second phase of the study was commenced. This phase of the study involved the construction and management of a purpose-built online discussion forum, which is the subject of the following section.

4.1.1.2. Managed Forum

In addition to observations, a purpose-built online discussion forum was implemented. The reasoning for this was to extend the scope of the study to include the thoughts, experiences and opinions of a generalised group of participants. There were no selection criteria applied to participants, so long as they agreed to the rules of behaviour outlined in the online information page (Appendix 5: Online Info Page), which every applicant did, through their acceptance of it and the consent form (Appendix 6: Online Consent)

Participation in the forum was advertised via a poster which was placed in several locations around the Trinity College Dublin campus (Appendix 2: Recruitment Advert). The same advert was used for recruiting interview participants (discussed in section 4.1.1.4.). Participants were also sought via Twitter, using the dedicated account @laughresearch (Appendix 3: Twitter Recruitment) and via a Facebook page (Appendix 4: Facebook Recruitment).

The forum was accessible via a link from the purpose-built website www.laughterresearch.com, which was built using WordPress software by the researcher (no longer used for research, but currently maintained as an educational resource). It was also available via a direct link to the forum – www.laughter.discussioncommunity.com (no longer live). The discussion forum was a pre-built, commercially available forum product to which one can add a URL of choice. In either case, potential participants were directed to read the information page (Appendix 5: Online Info Page) and they were required to provide informed consent via an online form (Appendix 6: Online Consent). The website also had a dedicated page with information on the privacy policy (Appendix 7: Website Privacy Policy)

Once this online consent form was completed, the details were automatically diverted to my email account and if the participant had correctly indicated their informed consent, they were then instructed to create an anonymous username and they were given access to the forum. As each participant had the right and opportunity to withdraw from the research at any stage, they were provided with the debrief details (Appendix 10. Debrief Information) via the Online Info Page (Appendix 5) at the point of giving consent

and they were reminded to print and maintain these documents for their records. In total, there were 18 participants, plus the researcher involved in the forum discussions.

As owner of the URL, I was able to control access, so the forum was not publicly viewable. It was only available to those who signed up through the procedure described above.

Early topics which had emerged from the observations stage of the research were initially used as starter topics to instigate conversations and pose questions to members of the forum. For example, the following post was made on the forum, based upon an observation regarding adult play, which I had made previously:

> Kids don't have the monopoly on laughing while playing – adults do it too. Perhaps, like me, you like to do a bit of mountain biking and find yourself laughing out loud as you bounce down a mountain while trying to avoid sharp rocks, slippery tree stumps and roots. There isn't anything 'funny' about it at the time, but the exhiliration sure can give me a laugh and an even better laugh is often had when sharing stories of the near misses after the trek. Maybe you find that a good game of bridge, or scrabble splits your sides. Whatever the case, it would be great if you can share your stories here. (Researcher initiated forum topic – Adult Play)

By presenting this abstraction to the forum without any prerequisite questions attached, other than a request for the sharing of stories, the intention was to observe what reactions spontaneously occurred, rather than presenting preconceptions to the forum group. Follow up comments by forum contributors, directly related to the forum post above provided new data such as that presented in *Table 4: Forum Quotes* below.

Note that this data is presented for the purposes of representing the procedure which as used to stimulate discussions. It is not a presentation of findings.

Table 1: Forum Quotes

Direct quotes from forum

I suppose one of the main times and reasons I laugh is when I'm with friends…we always have a good laugh.
I miss the freedom kids have to just laugh and have fun. I think it's harder as adults to find the time and be relaxed enough to just laugh. Kids have no worries or shortage of time.
I find both myself and my husband are more relaxed after a few drinks…it's like the whole atmosphere is relaxed. We get more playful, tickling, funny one liners and joking around
One of my funniest laughing fits was with my mum in a car park. We had been shopping all day with 3 kids and we were wrecked and very stressed. We lifted the pram up to put it in the boot and everything fell out. Through a fit of laughing and crying I could barely drive the car. I think it was hysteria. If we didn't laugh we would cry.

After a short period of time, forum topics began to grow and participants posed their own observations and shared stories relevant to laughter. Details of the means of analysis are provided in **section 4.1.2.5. Managed Forum**.

Further theoretical sampling was undertaken, in the form of interviews (**section 4.1.1.3.)** as well as targeted analysis of open access forums which were laughter topic specific and not curated by the researcher. These and other methods of data collection are detailed in the **section 4.1.1.4. Web Based Discussions, YouTube & Google Alerts**.

4.1.1.3. Interviews

The same advert was used for recruiting interview participants as had been used to recruit participants on the managed forum (section 4.1.2.5.). Participants were also sought via Twitter, using the dedicated account @laughresearch (Appendix 3: Twitter Recruitment) and via a Facebook page (Appendix 4: Facebook Recruitment). However, whilst some participants were recruited in this random fashion, the majority were approached and asked to participate on account of the fact that they had a specific connection either with laughter directly (laughter yoga instructors and comedians), they brought up a point in the managed forum which stimulated further theoretical sampling, or their particular field/experience was related in some manner to the theoretical progression of the study. Further details in this regard are detailed later in **section 4.1.2. Coding & Analysis**

In total, 21 interviews took place. The format of the interviews was informal and unstructured at first, in order to allow the main concern of the participants emerge in the conversations. As the conversations would progress, I would listen for and focus upon relevant topics which had arisen in observational, interview and laughter alert data. For instance, the topic of nervous laughter arose a lot in the laughter alerts, so when someone would make comments related to such laughter in an interview, I would ask them to expand, in order to strengthen any concepts which had emerged elsewhere. Interviews were carried out in a variety of circumstances. Several were in the place of work of the participant, with four carried out on Skype, two by telephone and the remainder carried out in the school of psychology in Trinity College, Dublin.

With regards to ethical procedures in this regard, prior to commencement of each interview I explained the nature and purpose of the study, as per the details contained in the information sheet (Appendix 8: Interview information sheet). I also allowed participants time to familiarise themselves with and sign the consent form, a copy of which was provided to them (Appendix 9: Interview consent sheet, (online versions supplied to Skype & phone participants) and informed them that audio would be recorded for later transcription. Whilst recordings are not recommended by Glaser, who prefers to listen and then write memos after interviews, I am profoundly aware that my own skills of recollection would not be sufficient to carry out his task, hence my decision to record all interviews.

Participants were then given an opportunity to ask questions in advance of the interview. Post interview, participants were debriefed as to the nature of the study which they had taken part in and they were reminded of their right to withdraw, as per the debrief sheet (Appendix 10: Debrief Information), a copy of which was provided.

After each interview, recordings were transcribed for the purposes of analysis. The means by which the coding and analysis were carried out are detailed in **section 4.1.2. Coding & Analysis.**

4.1.1.4. Web Based Discussions, YouTube & Google Alerts

Additional ethical approval was sought and received from the TCD school of psychology research ethics committee at this juncture in order to expand the study into the gathering of data from open access sources online, as this had not been an aspect of the original research design. It was decided that while the open source data is readily available, that in order to further protect the anonymity of the commentators and bloggers on these online sources (who typically use anonymous usernames), that when quoting directly from them, their original usernames would not be used, nor would a direct link to the URL of the quote be provided in the thesis document. Rather, in such cases, the quotes are simply attributed as follows, for example: “I cried laughing at a funeral” (Anon forum contributor – Redditt), or (Anon blogger). For the purposes of auditing, all of the direct sources for these references have been maintained and will be stored securely in accordance with the Trinity College Dublin data storage policy.

Yahoo & Redditt

The open source, publicly available platforms of Redditt and Yahoo Answers were accessed via www.redditt.com and www.answers.yahoo.com for the purpose of analysing laughter related text conversations which had already occurred on those platforms without the intervention or interaction of the researcher.

Examples of questions which had transpired from observations, interviews and the curated forum, which were further sampled for through these open access sources were:

- What made you laugh today? (Inspired by a random observation a forum participant made of themselves laughing at an incident of road rage they experienced).
- Do you laugh when alone? (Inspired by an observation that people laugh while walking through the city unaccompanied).
- What was the most inappropriate time you’ve ever laughed? (Inspired by discussion of laughter at a funeral in curated forum).

These specific questions had previously been asked publicly by anonymous individuals on these platforms and they had in each case attracted a number of anonymous responses. None of these questions were posed by the researcher. The discussions were printed out for examination. The means by which the coding and analysis were carried out are detailed in **section 4.1.2. Coding & Analysis**.

YouTube

In addition, www.youtube.com was also used as a source of data. When investigating the developmental aspects of laughter (inspired by interviews with school teachers which indicated developmental progression of laughter), open source videos of caregivers interacting with infants and children were studied, as where videos of children laughing. The search term 'baby's first laugh' was used to find videos of infant laughter. Additionally, the search term 'scared baby' was used for the purposes of comparing video recordings of startles leading to crying versus startles leading to laughter.

The means by which the coding and analysis were carried out are detailed in section **4.1.2. Coding & Analysis.**

Google Alerts

In addition to the above data collection techniques, an automated system, known as a change detection and notification system (CDN), which took advantage of the 'Google Alerts' service was also implemented in order to broaden the scope of the data. Rather than carry out search engine explorations, the data was curated to some degree by the Google algorithms for relevance and delivered directly to my email inbox on a daily basis. Alerts on any subject matter are available by navigating to www.google.com/alerts, entering the term of interest into a search box, supplying an email address and specifying the frequency at which one would like to receive the alerts.

Whilst search engines are designed to find web pages, CDN systems are designed to monitor changes to web pages. This increased the likelihood of gathered content being related to online conversations, rather than the inevitable ranking results of a search

engine, which would exclude everyday conversations about laughter and increase the likelihood of commercial and trending topics appearing in the search results.

By implementing a daily alert for the terms ‘laughter’ and ‘laugh’ over a one-month period, I was automatically provided with the latest commentary, news articles, forum discussions and blog posts which collectively provided 790 blocks of text for analysis. Exclusion and selection criteria were applied to these text blocks, in that the body of the text had to include the word ‘laugh’, either in its own right, or as a component in another word such as ‘laughing’, ‘laughable’ or ‘laughter’ for example.

This criterion was applied as many blocks of text were found to have a title which included the words ‘laughing’, ‘laughter’, or ‘laugh’ but which did not discuss laughter in any fashion. A surprisingly common example of such a phenomenon was web versions of local newspapers advertising forthcoming charity comedy events, or reporting briefly that such an event had taken place. As a consequence of this application of exclusion criteria, a more focused batch of 258 remained. Analysis of these text blocks resulted in 626 coded incidents for comparative analysis.

The means by which the coding and analysis were carried out are detailed in **section 4.1.2. Coding & Analysis.**

4.1.1.5. Literature Integration

Finally, whilst the topic of extant literature and its role in the grounded theory method has already been discussed in the introductory chapter, it is important to reiterate the valuable role of the literature in the current theory, particularly in the context of outlining sources of data in the current methods chapter.

In keeping with the grounded theory method, extant theory was not a starting point for the study, and as mentioned earlier, a literature review did not precede the gathering of data. Rather, as per the guidance of the grounded theory method, this aspect of the research was delayed until the core category was unearthed (Glaser, 1998). Extant theory was analysed and relevant theory 'earned its way' (Glaser & Strauss, 1967) into the theory as comparative data which is integrated into the overall concepts.

Examples are the inclusion of the theory of memory reconsolidation (Ecker, Ticic, & Hulley, 2012) as a possible means for the buffering effects of laughter which emerged and the theory of event segmentation (Shipley & Zacks, 2008) as a proposed model of why discordant events might instigate a reaction such as laughter.

Literature was gathered and analysed as it would be in the case of any academic literature review. The difference in this case is that, in line with the grounded theory methodology, the detailed and substantive literature review was delayed until after the grounded data had yielded a core concept in which enough confidence had built, so as to not risk a reification of previous works.

Having laid out above the nature of the data and the processes by which data were gathered, attention now turns to the means by which the analyses were carried out. The explanation begins with the principles of coding, memos and analysis in the general sense of a grounded theory, then specifics details of the analysis of the grounded data collected in the current study are presented.

4.1.2. Coding & Analysis

Coding in grounded theory is multifaceted. The initial form of coding is termed *Substantive Coding*, and it is the means by which the researcher first conceptualises the patterns which arise in the data. This initial coding phase consists of two approaches to understanding data – *Open Coding* and *Selective Coding*. The secondary form of coding, which operates at a higher conceptual level, is known as *Theoretical Coding*. Theoretical codes "conceptualize how the substantive codes may relate to each other…without substantive codes, they are empty abstractions" (Glaser, 1978, p. 72).

Initially, all coding was done on printed copies of data. However, with the large amount of data collected, it became increasingly difficult to cross reference and compare. At this juncture, the use of Microsoft OneNote, combined with Microsoft OfficeLens was implemented. OfficeLens allows the user to photograph any document, including handwritten notes, which can then be transferred to Microsoft OneNote. OneNote is not a data analysis software, so the coding is still done in its entirety by the researcher. It is however a comprehensive notebook system, which allows the user to file documents in a logical and systemised manner of his own choosing.

All of the notebooks are searchable and hyperlinks can be created within the notebooks allowing the user to place the same block of text in multiple notebooks if, for instance, the text contains several codes. By clicking on the hyperlinks, these cross-referenced notebooks can be instantly accessed for constant comparison. Figure 1 below is a screen shot from the Memos Notebook, which shows the cross referencing between codes, categories and memos in action in OneNote. *Codes*, *Categories* and *Sources of Data* are labelled on this page, which includes an OfficeLens scan of a handwritten notebook. The same system was used for Extant Literature, Methods, Interview Memos, Codes and Categories, each of which was contained within its own notebook.

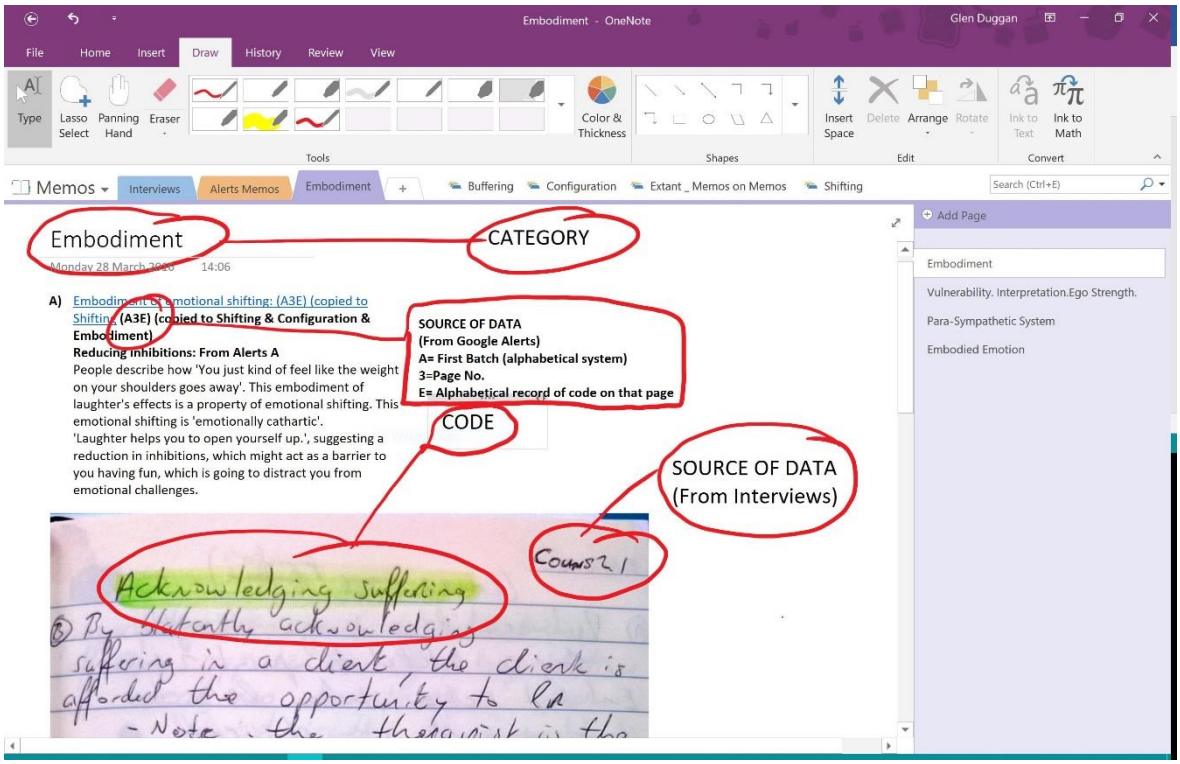


Figure 2: OneNote Coding Process

All the while during the coding process, the researcher records memos pertaining to the emerging codes, categories and their properties.

4.1.2.1. Open Coding

Whilst memoing is an ongoing process which occurs throughout the theory development, open coding is the first stage of analysis, in that the researcher analyses the data line by line, applying codes to the individual incidents (or chunks of meaningful data). By applying these codes, this process allows one to compare apparently disparate incident to incident for the purposes of unearthing categories. As Glaser suggests, apples can indeed be compared to oranges if the properties which are being compared are meaningful (e.g. nutritional value of fruit).

Indeed, in the current theory, it became clear that vastly differing indicators were interchangeable, in that they pointed to the same processes occurring, despite their apparent variability. For example, a person laughing at a corpse almost falling from a coffin, indicated the processing of discordance, just as a child laughing at a simple joke indicates the same process, albeit with a different degree of discord. When patterns such as these repeated so regularly as to be considered saturated, they ultimately (after the methodological treatment described in the remainder of this chapter) fed into the core tenet of the theory. All other concepts in the theory relate to the core concept.

> In contrast to analytic induction, the constant comparative method is concerned with generating and plausibly suggesting (but not provisionally testing) many categories, properties, and hypotheses about general problems (Glaser & Strauss, 1967, Chapter V, para. 8).

A category is not formed by one incident however. Rather, through a process of constant comparison, multiple instances of related codes are examined in order to uncover their inherent properties and ultimately to point towards representative categories. For example, in the current theory, codes such as *Expectations*, *Interpretations* and *Exaggeration* lead to the formation of the category ***Configuration*** when they were compared with each other.

As an example, Figure 3 below is a visual representation of the formation of the category ***Configuration***, which plays a central role in the expression of laughter in the current theory. Figure 3 is adapted from Glaser (1978, p. 63). **Note: IR = Indicator (Individual Datum)**

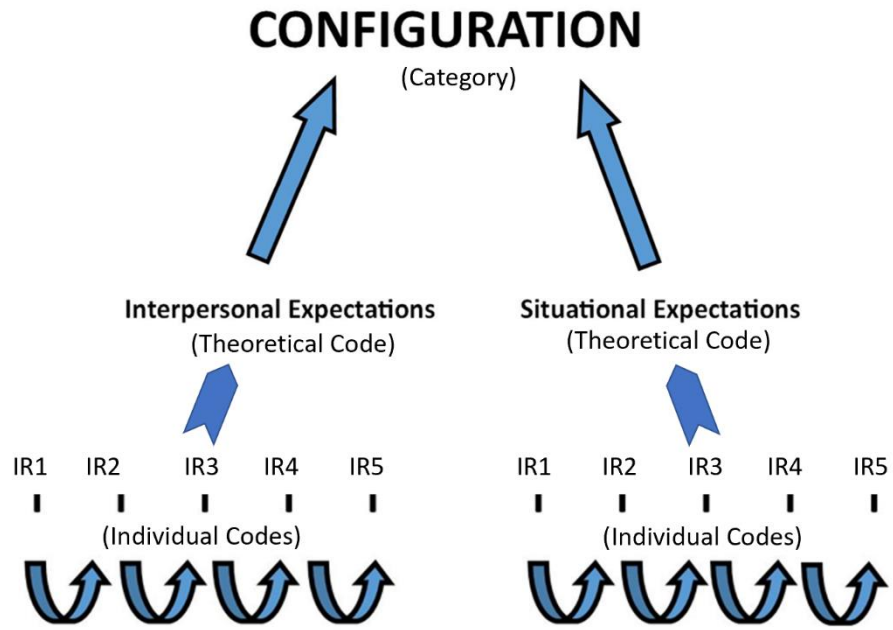


Figure 3: Category Formation

By engaging in this constant comparison process, regularity of codes allows one to recognise when a code and ultimately, the category which it indicates has reached a point of saturation, in that the data is not yielding new properties associated with the code and ensuing category.

> Open coding proliferates codes fast, which then begins to slow down the coding by continually verifying that each code fits [that which it conceptually represents], eventually saturating the code. (Glaser, 1978, p. 61)

This proliferation of codes can lead to an overwhelming number of codes to compare. This did indeed occur in the case of my own analysis, despite Glaser's advice to be tuned in to and to avoid this possibility by recognising the saturation of a concept when it occurs. It was with some apprehension therefore, specifically the fear of missing out on some important factor, that the progression to the next phase of analysis occurred.

4.1.2.2. Selective Coding

Selective coding takes place when the researcher has become confident that the core variable has been discovered - the core variable being the central process to which all other variables in the theory relate. Selective coding is a fine-tuning of the coding process in that the researcher is no longer coding openly for everything which occurs in the data. Rather, the focus of attention and resources is now placed upon refining the understanding of the factors, or categories which are understood to relate to the central premise. In the current theory, the central premise being that laughter serves to negotiate experiences of discord.

> The analyst looks for the conditions and consequences and so forth that relate to the core process. His analysis is guided by the core variable. Selective coding significantly delimits his work from open coding, while he sees his focus within the total context he developed during open coding. (Glaser, 1978, p. 61).

This refinement avoids a continuation of the continuous addition of new codes for consideration, as the researcher begins to narrow the focus down to those codes which indicate categories which have earned a position in the theory through their validity. This validity will have emerged through the comparison to other incidents, which indicate the same code. In the current theory, this selective coding process resulted in the bolstering of categories such as *Configuration*, through a concerted concentration upon evidence for codes which related directly to that concept.

4.1.2.3. Theoretical Coding & Sorting

As mentioned earlier, theoretical codes represent how codes relate to each other. They differ from substantive codes, in that they are not attempts to capture the essence of a particular datum. Rather, theoretical codes are intended to capture the integration of codes and concepts with each other. To illustrate the difference, examples of substantive codes are, *Anger* and *Reframing* – coded directly from a quotation discovered in a Google Alert (see section 4.1.1.4.)

However, the theoretical code *Emotional Shifting*, arose from the comparison of these and other related substantive codes to each other. This arose as Anger and Reframing were understood to be significant shifts in emotional states. Ultimately, even the theoretical code *Emotional Shifting* was subsumed into the broader concept of *Shifting States*, as it did not appear that laughter was only having an influence upon emotional states. It was for instance, also causing cognitive distractions. These laughter related process are discussed later in the theory, as the methods section is not the place for theoretical discussion.

Theoretical codes represent a conceptualised pattern to the interrelations between substantive codes. In that sense, they are said to lift the conceptual level of the grounded theory. Below are examples of the development of phases of the theory from initial codes, to higher order concepts, which can only arise through the sorting of theoretical codes.

Tables 1, 2 and 3 below portray the progression from simple codes and lower level abstractions to theoretical codes and higher-level abstractions. Note that these tables are not intended to be presentations of results. The contents of the tables are presented for the purpose of illustrating the process of analysis.

Table 2: Examples of early commonly emergent substantive codes

Code	Abstraction
Laughter Gatekeepers:	Individuals and institutions who temper and/or allow laughter to occur, within their rule sets
Healing:	A common belief that laughter represented a pivot point towards healing

Table 3: Examples of emergent categories and their constituent codes

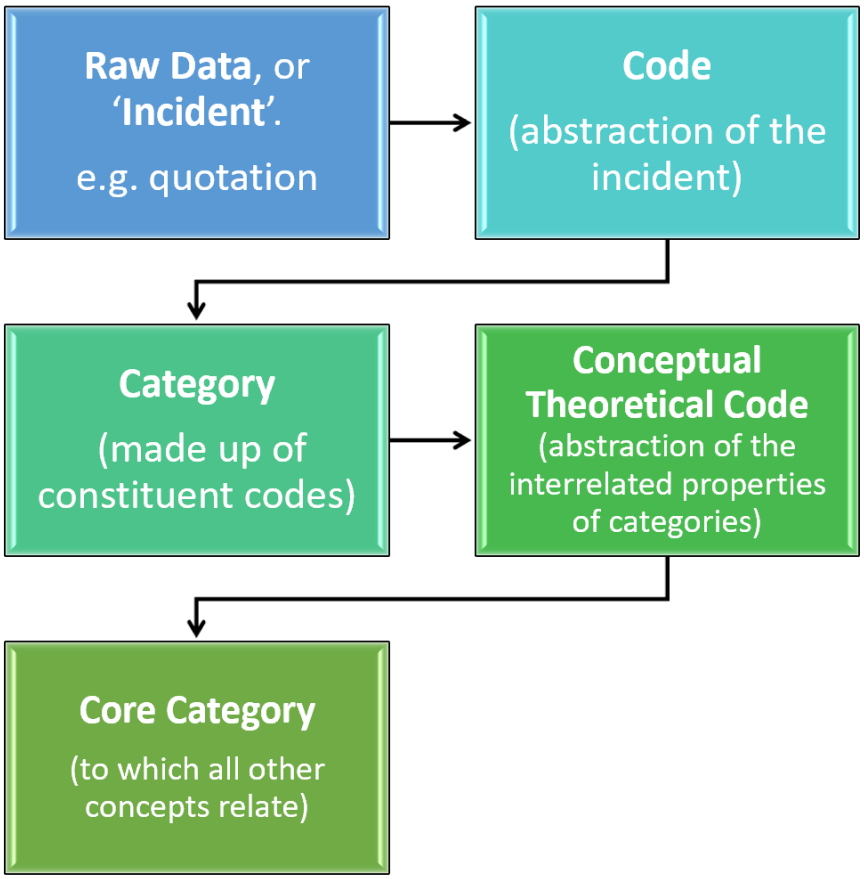
Category	Constituent codes
Buffering:	Healing, Relief, Defence, Distraction
Social Interaction:	Contrivance, Bonding, Earning, Challenging
Developmental:	Infant Laughter, Learning to use laughter, Play
Power:	Challenging Authority, Ridicule, Control, Laughter gatekeepers

Table 4: Examples of consequent theoretical codes in memos

Conceptual (Theoretical) Code	Conceptual Abstraction
Emotional Shifting:	Laughter can shift emotions towards and away from positive valence, depending upon the circumstances. Through processes such as **Buffering** & **Reframing**. E.g. nervous laughter versus mirthful laughter
Contextual Configuration:	Laughter does not occur indiscriminately in a psychological vacuum, rather, it is subject to environmental and psychological contexts, such as **Power Relations** & **Situational Expectations** which make laughter more or less likely to occur.

A visualisation of the progression from raw data to conceptual code and then to Core Concept is presented in figure 4 below:

Figure 4: Coding Flow Chart



According to Glaser, sorting of theoretical codes and memos is to be done by hand, by literally cutting up notebooks into individual memos, placing them around a large work surface and then picking them up, one by one and comparing them to each other until they are sorted into integrated piles (Glaser, 1998).

However, my own work surface was a digital one – namely the aforementioned Microsoft OneNote. My memos were ‘cut up’ in individual scans and they were moved, sorted and re-sorted on the desktop. Each memo, code and category was sortable, colour coded, easily recategorised as the theory developed and instantly searchable. It is my belief therefore that the digital work space is as useful in building a grounded theory as is the physical workspace.

Having detailed above the fundamental grounded theory methods which guide the development of an integrated grounded theory, attention is now drawn to how the data was specifically analysed in the current theory.

4.1.2.4. Field Notes

The procedure by which observations and accompanying field notes were made is detailed in **section 4.1.1.1.**

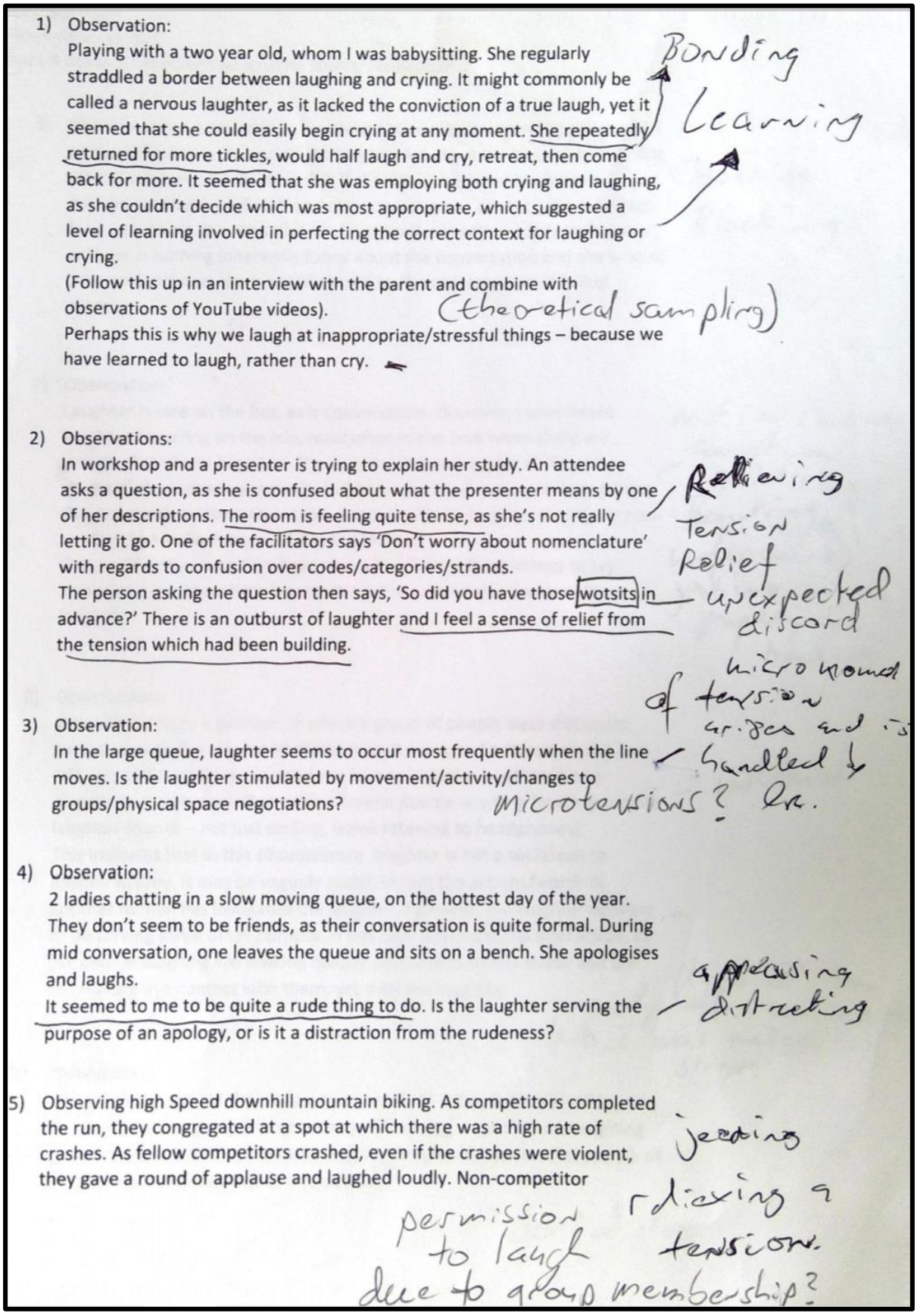
For the purposes of ease of analysis, rather than work with the small handwritten notebooks, observations were typed into documents. These documents were transferred to OneNote and coded. When these codes were compared to other codes (which could have arisen from any of the other forms of data), if patterns arose, these formed basic categories. A sample of a typical set of observations is provided in *Figure 5 Observational Field Notes*, on the following page.

Note how on observation 1, there is an example of the planning of theoretical sampling, which is the means by which the researcher takes guidance from the emerging data as to where to go next with the sampling. In this case, a follow up interview was not carried out, but open source videos on YouTube of young children laughing were studied directly as a consequence of the experience outlined in that particular observation. (The analysis of such forms of data is explained in **section 4.1.2.6.**)

Observation 1 is also an example of the birth of a concept. In this particular case, it suggested the notion of people learning how and when to manage laughter (from a developmental sense). This and other concepts fed into each other and the overall theory by means of constant comparison with each other.

The section following figure 5 explores the means by which data from the managed forums was interpreted.

Figure 5: Observational Field Notes



1) Observation:
Playing with a two year old, whom I was babysitting. She regularly straddled a border between laughing and crying. It might commonly be called a nervous laughter, as it lacked the conviction of a true laugh, yet it seemed that she could easily begin crying at any moment. She repeatedly returned for more tickles, would half laugh and cry, retreat, then come back for more. It seemed that she was employing both crying and laughing, as she couldn't decide which was most appropriate, which suggested a level of learning involved in perfecting the correct context for laughing or crying.
(Follow this up in an interview with the parent and combine with observations of YouTube videos). (theoretical sampling)
Perhaps this is why we laugh at inappropriate/stressful things – because we have learned to laugh, rather than cry.

Bonding
Learning

2) Observations:
In workshop and a presenter is trying to explain her study. An attendee asks a question, as she is confused about what the presenter means by one of her descriptions. The room is feeling quite tense, as she's not really letting it go. One of the facilitators says 'Don't worry about nomenclature' with regards to confusion over codes/categories/strands.
The person asking the question then says, 'So did you have those wotsits in advance?' There is an outburst of laughter and I feel a sense of relief from the tension which had been building.

Relieving
Tension
Relief
unexpected
discard
micro moment of tension arises and is handled by

3) Observation:
In the large queue, laughter seems to occur most frequently when the line moves. Is the laughter stimulated by movement/activity/changes to groups/physical space negotiations? microtensions? &c.

4) Observation:
2 ladies chatting in a slow moving queue, on the hottest day of the year. They don't seem to be friends, as their conversation is quite formal. During mid conversation, one leaves the queue and sits on a bench. She apologises and laughs.
It seemed to me to be quite a rude thing to do. Is the laughter serving the purpose of an apology, or is it a distraction from the rudeness?

appeasing
distracting

5) Observing high Speed downhill mountain biking. As competitors completed the run, they congregated at a spot at which there was a high rate of crashes. As fellow competitors crashed, even if the crashes were violent, they gave a round of applause and laughed loudly. Non-competitor

Jeering
relieving tensions.
permission to laugh due to group membership?

4.1.2.5. Managed Forum

As mentioned above, field notes provided a limited quality and quantity of data. Further data was required and this was done through the means of a purpose-built forum.

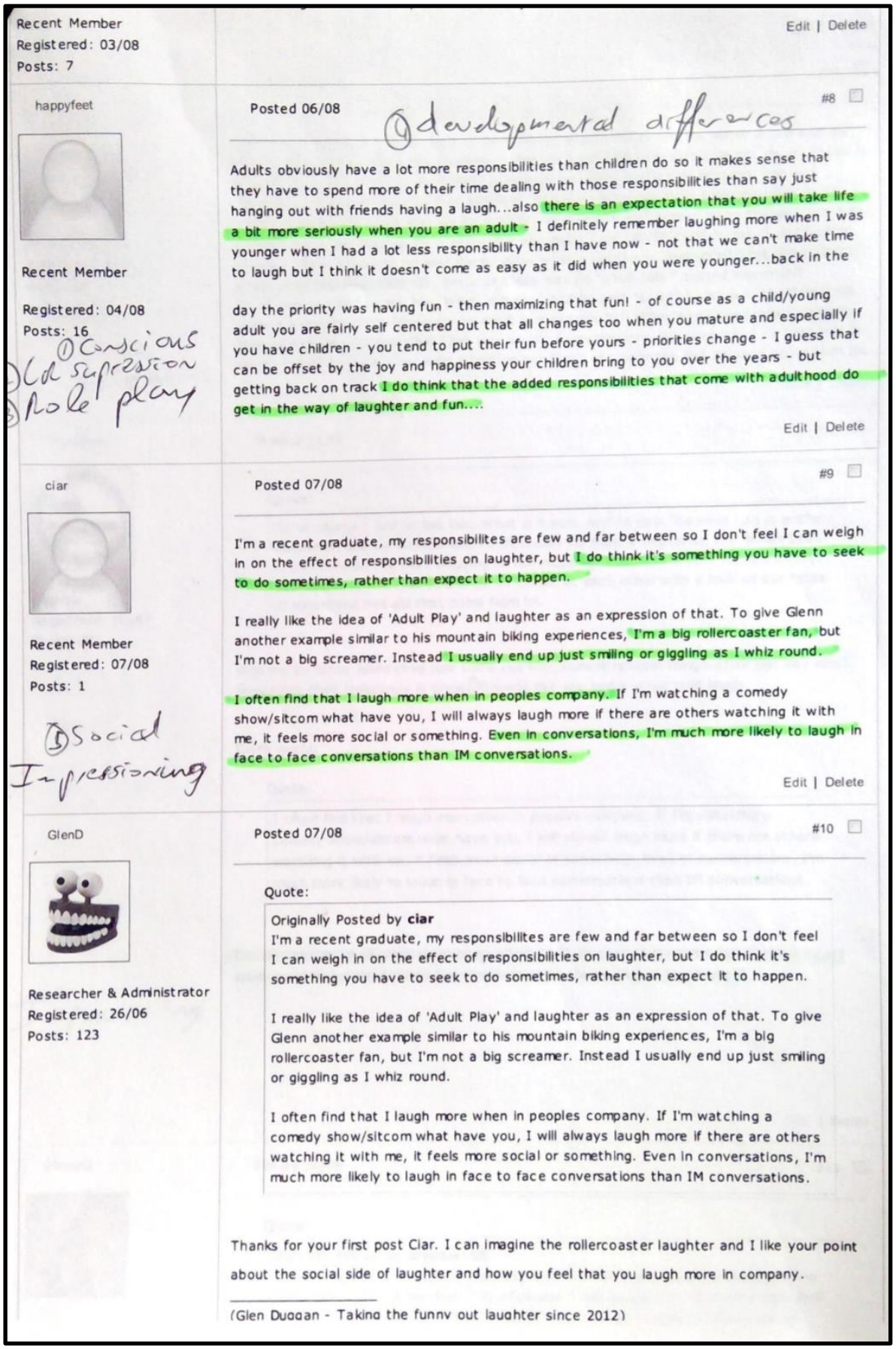
The primary intention of the forum was to promote freethinking and fluid discourse amongst the participants, in order to obtain data about laughter which was participant led, as opposed to it being imposed by the researcher. The reasoning for this was to obtain data which was as ecologically valid as possible.

In the format of a forum, several discussions could take place at the same time, so in addition to participant led discussions, the option to instigate a conversation which was related to a developing concept was of great benefit. This allowed theoretical progression through the fleshing out of tentative concepts.

Each post was analysed line by line, in a search for new codes, in addition to the application of previously discovered codes to new data. Such discoveries helped to add extra dimension to codes and brought well developed concepts a step closer to saturation. As with field notes, codes were recorded in OneNote and linked to whichever category they best fitted.

An example of the format in which discussions took place is provided below in figure 6.

Figure 6: Sample Forum Page



Recent Member
Registered: 03/08
Posts: 7

Edit | Delete

happyfeet

Recent Member

Registered: 04/08
Posts: 16

1 Conscious
2 Lil supression
3 Role play

Posted 06/08 #8

2 developmental differences

Adults obviously have a lot more responsibilities than children do so it makes sense that they have to spend more of their time dealing with those responsibilities than say just hanging out with friends having a laugh...also there is an expectation that you will take life a bit more seriously when you are an adult - I definitely remember laughing more when I was younger when I had a lot less responsibility than I have now - not that we can't make time to laugh but I think it doesn't come as easy as it did when you were younger...back in the day the priority was having fun - then maximizing that fun! - of course as a child/young adult you are fairly self centered but that all changes too when you mature and especially if you have children - you tend to put their fun before yours - priorities change - I guess that can be offset by the joy and happiness your children bring to you over the years - but getting back on track I do think that the added responsibilities that come with adulthood do get in the way of laughter and fun....

Edit | Delete

ciar

Recent Member
Registered: 07/08
Posts: 1

1 Social Impressioning

Posted 07/08 #9

I'm a recent graduate, my responsibilites are few and far between so I don't feel I can weigh in on the effect of responsibilities on laughter, but I do think it's something you have to seek to do sometimes, rather than expect it to happen.

I really like the idea of 'Adult Play' and laughter as an expression of that. To give Glenn another example similar to his mountain biking experiences, I'm a big rollercoaster fan, but I'm not a big screamer. Instead I usually end up just smiling or giggling as I whiz round.

I often find that I laugh more when in peoples company. If I'm watching a comedy show/sitcom what have you, I will always laugh more if there are others watching it with me, it feels more social or something. Even in conversations, I'm much more likely to laugh in face to face conversations than IM conversations.

Edit | Delete

GlenD

Researcher & Administrator
Registered: 26/06
Posts: 123

Posted 07/08 #10

Quote:

Originally Posted by **ciar**
I'm a recent graduate, my responsibilites are few and far between so I don't feel I can weigh in on the effect of responsibilities on laughter, but I do think it's something you have to seek to do sometimes, rather than expect it to happen.

I really like the idea of 'Adult Play' and laughter as an expression of that. To give Glenn another example similar to his mountain biking experiences, I'm a big rollercoaster fan, but I'm not a big screamer. Instead I usually end up just smiling or giggling as I whiz round.

I often find that I laugh more when in peoples company. If I'm watching a comedy show/sitcom what have you, I will always laugh more if there are others watching it with me, it feels more social or something. Even in conversations, I'm much more likely to laugh in face to face conversations than IM conversations.

Thanks for your first post Ciar. I can imagine the rollercoaster laughter and I like your point about the social side of laughter and how you feel that you laugh more in company.

(Glen Duggan - Taking the funny out laughter since 2012)

Ultimately, the combination of my introduction of topics and the participant led topics resulted in 25 individual discussion threads, with a combined total of 167 individual comments, leading to 101 coded datum points, or 'incidents' in GT terminology.

However, while each incident (comment) was relevant, valuable and ultimately incorporated into the theory if it patterned out when compared to other incidents from the forum and later, from other data sources, participation in the forum was not growing to a level which was saturating emerging concepts to a satisfactory degree.

In addition, regarding the notion of ecological validity mentioned above, it was felt that the controlled format of the forum was not ideal with regards to promoting a natural flow to the discussions. It was evident at this juncture that if the theory were to develop, that further theoretical sampling would be required.

> Theoretical sampling is the process of data collection for generating theory whereby the analyst jointly collects, codes, and analyses his data and decides what to collect next and where to find them, in order to develop his theory as it emerges. This process of data collection is controlled by the emerging theory. (Glaser, 1978, p. 37)

Whilst limitations to the format of the managed forum were apparent, the overall concept of analysing online discussions of laughter remained important, as it was felt that such discussions could offer valuable insights.

4.1.2.6. Web based discussions

As was mentioned earlier, the scope of the data collection was broadened for the purpose of analysing laughter related text conversations which had already occurred on online platforms, without the intervention or interaction of the researcher. The aim of this approach was to improve the ecological validity of the study and to obtain additional relevant data. The idea was inspired by a comment on the managed forum, in which a participant had discussed something they had read on Reddit which had made them laugh.

Reddit

In line with grounded theory methodology, in the pursuit of following the lead of the data, Redditt discussion were analysed first. An example of such a coded and analysed discussion is provided below in Figure 8: Sample Reddit Discussion. As per the managed forum, the text was analysed line by line and coded. Memos were also written alongside this process, to promote conceptual thinking. Codes and related memos were recorded in OneNote and hyperlinks to the original document were created for each code and concept which emerged. This allowed for easy access to codes and concepts for the purposes of cross comparison.

Yahoo Answers

The next progression of data analysis was the content of discussions obtained from Yahoo Answers. This platform allows individuals to pose questions publicly and to receive answers from other individuals online. As it is a questions and answers format, the data was more specific, in that it quite conveniently posed and answered questions which were of great interest to the research, such as those outlined in **section 4.1.1.4.** As per the data from Reddit, the text was analysed line by line and coded. Memos were also written alongside this process, to promote and develop and saturate ongoing concepts. Codes and related memos were recorded in OneNote and hyperlinks to the original document were created for each code and concept which emerged. See Figure 10: Sample Yahoo Answers Page.

YouTube

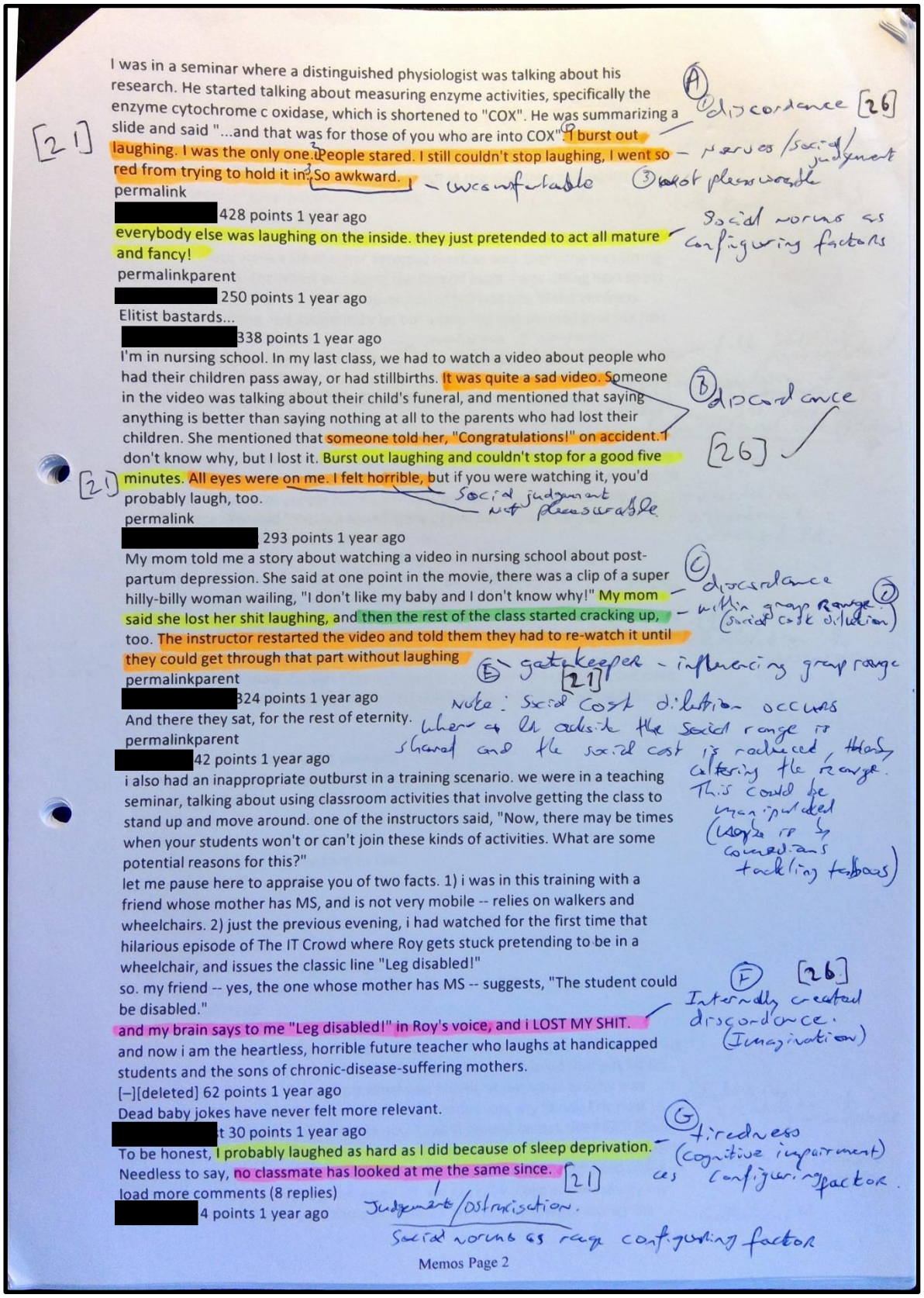
The data obtained from YouTube was in the format of video recordings. Initially, videos would be watched from start to finish, in order to obtain an overall impression. Following this, the video would be replayed and paused at relevant times, such as laughter events, in order to ascertain what the stimulus for the laughter was. Some videos only required cursory analysis, such as straightforward event of a man wearing speedos jumping onto solid ice, whereas others required moment by moment by moment analysis, such as a complex event involving an infant's laughing and startle responses to noises. Impressions of what the instigator of laughter was, what factors controlled or configured the laughter and what the impact of the laughter was were noted. Notes were coded and memoed and recorded in OneNote for cross comparison with other codes and categories.

Google Alerts

As explained earlier, Google Alerts is a web based changed detection and notification system. The advantage of this system is that it provides unexpected and random data from anywhere on the web, typically in the form of links to webpages on which there has been a mention of laughter (as this was the search term provided by the researcher). This data arises in any format, so it must be analysed in a manner which is relevant to the format in which it exists. For instance, a notification was received about a news article detailing a court hearing having to be postponed due to laughter in the court. This was analysed as per the other text formats above. Other data included links to audio podcasts, one of which was an interview with a laughter yoga instructor, so this was analysed by listening to the recording and writing analytical notes.

In each of the above online formats; Reddit, Yahoo Answers, YouTube and Google Alerts, the variety of data was invaluable to the development of a well-informed theory. Apart for the coded incidents and emergent codes, inspiration was also obtained for the content of numerous interviews which were carried out. The analysis of these interviews is the subject of the following section.

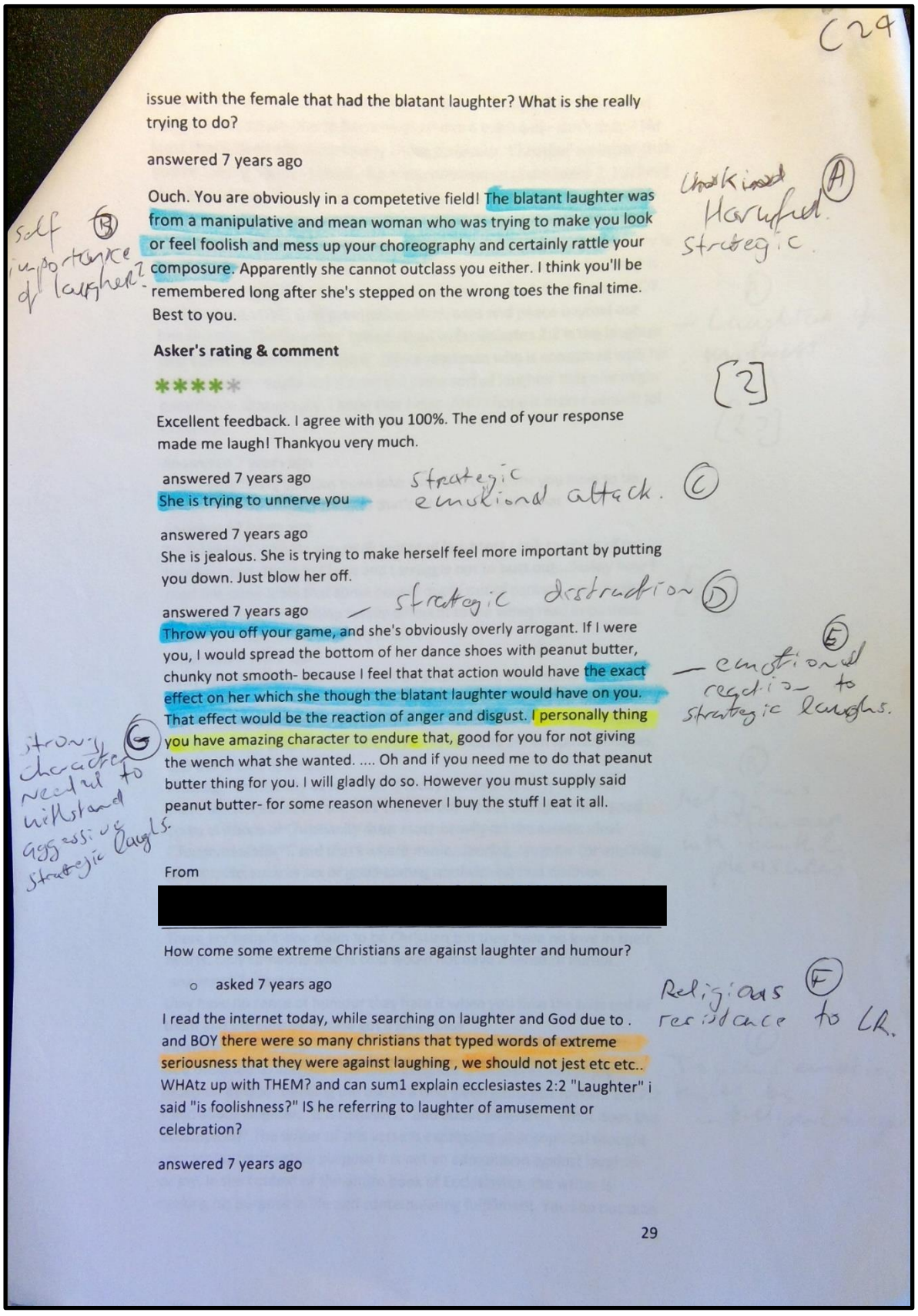
Figure 7: Sample Reddit Discussion



I was in a seminar where a distinguished physiologist was talking about his research. He started talking about measuring enzyme activities, specifically the enzyme cytochrome c oxidase, which is shortened to "COX". He was summarizing a slide and said "...and that was for those of you who are into COX". I burst out laughing. I was the only one. People stared. I still couldn't stop laughing, I went so red from trying to hold it in. So awkward.
permalink
[redacted] 428 points 1 year ago
everybody else was laughing on the inside. they just pretended to act all mature and fancy!
permalinkparent
[redacted] 250 points 1 year ago
Elitist bastards...
[redacted] 338 points 1 year ago
I'm in nursing school. In my last class, we had to watch a video about people who had their children pass away, or had stillbirths. It was quite a sad video. Someone in the video was talking about their child's funeral, and mentioned that saying anything is better than saying nothing at all to the parents who had lost their children. She mentioned that someone told her, "Congratulations!" on accident. I don't know why, but I lost it. Burst out laughing and couldn't stop for a good five minutes. All eyes were on me. I felt horrible, but if you were watching it, you'd probably laugh, too.
permalink
[redacted] 293 points 1 year ago
My mom told me a story about watching a video in nursing school about post-partum depression. She said at one point in the movie, there was a clip of a super hilly-billy woman wailing, "I don't like my baby and I don't know why!" My mom said she lost her shit laughing, and then the rest of the class started cracking up, too. The instructor restarted the video and told them they had to re-watch it until they could get through that part without laughing
permalinkparent
[redacted] 324 points 1 year ago
And there they sat, for the rest of eternity.
permalinkparent
[redacted] 42 points 1 year ago
i also had an inappropriate outburst in a training scenario. we were in a teaching seminar, talking about using classroom activities that involve getting the class to stand up and move around. one of the instructors said, "Now, there may be times when your students won't or can't join these kinds of activities. What are some potential reasons for this?"
let me pause here to appraise you of two facts. 1) i was in this training with a friend whose mother has MS, and is not very mobile -- relies on walkers and wheelchairs. 2) just the previous evening, i had watched for the first time that hilarious episode of The IT Crowd where Roy gets stuck pretending to be in a wheelchair, and issues the classic line "Leg disabled!"
so. my friend -- yes, the one whose mother has MS -- suggests, "The student could be disabled."
and my brain says to me "Leg disabled!" in Roy's voice, and i LOST MY SHIT.
and now i am the heartless, horrible future teacher who laughs at handicapped students and the sons of chronic-disease-suffering mothers.
[–][deleted] 62 points 1 year ago
Dead baby jokes have never felt more relevant.
[redacted]t 30 points 1 year ago
To be honest, I probably laughed as hard as I did because of sleep deprivation. Needless to say, no classmate has looked at me the same since.
load more comments (8 replies)
[redacted] 4 points 1 year ago

Memos Page 2

Figure 8: Sample Yahoo Answers Page



C29

issue with the female that had the blatant laughter? What is she really trying to do?

answered 7 years ago

Ouch. You are obviously in a competetive field! The blatant laughter was from a manipulative and mean woman who was trying to make you look or feel foolish and mess up your choreography and certainly rattle your composure. Apparently she cannot outclass you either. I think you'll be remembered long after she's stepped on the wrong toes the final time. Best to you.

Asker's rating & comment

*****

Excellent feedback. I agree with you 100%. The end of your response made me laugh! Thankyou very much.

answered 7 years ago

She is trying to unnerve you

answered 7 years ago

She is jealous. She is trying to make herself feel more important by putting you down. Just blow her off.

answered 7 years ago

Throw you off your game, and she's obviously overly arrogant. If I were you, I would spread the bottom of her dance shoes with peanut butter, chunky not smooth- because I feel that that action would have the exact effect on her which she though the blatant laughter would have on you. That effect would be the reaction of anger and disgust. I personally thing you have amazing character to endure that, good for you for not giving the wench what she wanted. .... Oh and if you need me to do that peanut butter thing for you. I will gladly do so. However you must supply said peanut butter- for some reason whenever I buy the stuff I eat it all.

From

[redacted]

How come some extreme Christians are against laughter and humour?

- asked 7 years ago

I read the internet today, while searching on laughter and God due to . and BOY there were so many christians that typed words of extreme seriousness that they were against laughing , we should not jest etc etc.. WHAtz up with THEM? and can sum1 explain ecclesiastes 2:2 "Laughter" i said "is foolishness?" IS he referring to laughter of amusement or celebration?

answered 7 years ago

29

4.1.2.7. Interviews

The reasons behind the interviews carried out in the current study are broad. Unlike a study in which a predetermined number of interviews about a specific topic in a predefined unit might be decided upon in advance, grounded theory is more fluid, in that the researcher is free to follow the data, in order to develop concepts.

Consequently, the participants varied immensely. The reasoning behind the interview are listed below.

1) Montessori teachers x2 – To explore developmental progression
2) Junior Infant's teacher – To explore developmental progression
3) 4th class teacher - To explore developmental progression
4) Primary school Principal – To explore the notion of a top down attitude to laughter in school (Institutional parameters)
5) Comedy Venue proprietor – To explore the concept of context
6) Comedian – To explore the concept of context and power
7) Clown – Made contact through the website (responded to advert)
8) Managed forum participant x4 – To explore personal interpretations of laughter
9) Psychotherapists x2 – To explore concepts of denial and defense through laughter
10) Laughter Yoga Instructors x2 – To explore 'laughing without humour'
11) IT Professional - (responded to advert)
12) Laughter related business owners x2 – To explore corporate use of laughter
13) Heritage site Interpreter – To explore use of laughter in adult teaching
14) Dr. Barney Glaser – Opportunity arose (he specified waving anonymity)

Each of these interviews was transcribed and analysed line by line. As with all other forms of data, this strengthened some concepts and led to further concepts. Many of these concepts would not have been conceived prior to the discussions. Therefore, as with all other sources of data, many of these incidents inspired further theoretical sampling and the investigation was extended to include further interviews, for the purpose of sampling for and saturating concepts which had emerged.

The combined total of 21 interviews which were carried out provided further support for emergent concepts to a point of theoretical saturation, at which point confidence in the core category of the current theory was well established.

4.1.2.8. Extant Literature

The final form of data to be discussed is the integration of extant literature. Extant literature was treated in the current theory, not as a source for verification of findings, but rather as data for comparison to other data. As a consequence, the literature is integrated throughout the theory, not as a list of renowned authors and their seminal works, but as valuable information which is synthesised into the theory when relevant.

As mentioned early in this document, in depth study of the literature is postponed until late in the process. The purpose being to avoid contaminating the emergent theory with concepts that might direct the researcher away from emergent properties and towards a situation in which the researcher may attempt to fit 'round data into square categories' (Glaser & Strauss, 1967).

An extensive literature review was carried out alongside the formation of the current theory, but only when the strength of the current theory was robust and the ability to withstand the weighty influence of extant theory was assured. This is not to say that learning from the literature did not occur. To the contrary, a developing grounded theory is flexible and although the core category had been formed before literature integration, much of the literature provided data which was unknown and/or unavailable to the researcher from the primary data which had been collected to that point.

As an example, this integration through comparison has been particularly valuable with regards to the extensive research which has been done elsewhere, which has elucidated the reality behind claims of 'laughter as medicine' (Lebowitz, Suh, Diaz, & Emery, 2011; Martin, 2001, 2002; Sugawara, Tarumi, & Tanaka, 2010; Van Nuys, 2011). More obscurely, but no less valuably, quantitative comparisons of the rates of fall-off in laughter during play of human children with the playful chirping of rats during play was certainly not something which had emerged in the current theory. However, from readings of Jaak Panksepp's work (Panksepp & Biven, 2012; Scott & Panksepp, 2003), fascinating parallels with the limits of a person's ability to use laughter as a means to negotiate distress was strengthened.

Of note in this regard is the detail that while this particular work is not directly discussed in the current theory, it was coded and used as a valuable source of comparative data, which is the purpose of literature in a grounded theory.

Where literature is referenced, it is on the basis of it adding to the theory in terms of convergences. For this reason, the current theory is not peppered with critical tear downs of the work of other academics and researchers.

In closing the current chapter, having detailed the rationale for the choice of theory, from the epistemological perspective to the pragmatic perspective and having detailed how the methods were employed to gather and analyse the data, the focus of the thesis now moves to the presentation of the grounded theory itself.

5. The Role of Discordance in Instigating Laughter

> Man is the only animal that laughs and weeps; for he is the only animal that is struck with the difference between what things are, and what they ought to be. (Hazlitt, 1901, p. 1)

Despite the apparent unwieldy diversity in the factors of laughter's instigation, configuration and impact – points which will be discussed throughout in greater detail, it has emerged that there is a latent pattern to laughter's occurrence. To follow in this chapter is the presentation of the first of three core tenets of the current theory. Whilst these are not presented in order of importance, the current discussion revolves around the factors which instigate laughter in the first instance.

Through the ongoing analysis of data, including observations in the field, analysis of video, interviews, discussions in a dedicated forum, and several hundred blocks of text which were systematically gathered online, it rapidly emerged that from a temporal perspective, when laughter occurs, it is most commonly post discordance. Note that a definitive statement is not made here, such as 'laughter always occurs post discordance' as this is not factually correct. Certain forms of laughter are under complete volitional control and such laughter has potential to be produced at any time. However, it has emerged that even volitional laughter appears to typically occur for a purpose (goal-oriented laughter) and that purpose is also to negotiate some form of discord, as the quote below shows:

> I do this. It's a coping strategy to diffuse the tension. I am able to turn it off and be more serious when I really want to, but I understand that I mostly do it to make other people feel more comfortable (Anon forum contributor – Google alerts)

Indeed, it is proposed that the 'substantive problem' (Glaser, 1998) which people who are laughing are seeking to resolve (as Glaser describes it) is an experience of discord.

> Laughing [at someone else's minor injury] doesn't mean we don't care. I personally think it's just how our body sometimes chooses to respond. (Anon forum contributor – Google alerts)

This is not typically a conscious process, as laughter is usually a semi-spontaneous behaviour; however, it certainly can be conscious when people intentionally seek to use laughter to lift their mood for instance. Therefore, the theoretical proposition put forthwith is that ***laughter is a means to negotiate experiences of discord***. Whilst this may seem like a straightforward concept (considering it can be summarised in one sentence), a comprehensive understanding of this concept requires the combined knowledge presented in this and the following two chapters. As mentioned above however, the current chapter focuses upon the *experience* of discord.

At the core of this process is the negotiation of emotional and cognitive discord or sets of discordances of varying degrees. In the current research, examples of laughter provoking discord varied from an observation which I recorded in the field of a lady's solitary laughter when she dropped her drink container – a mild discord, to another participant describing, in an interview, details of her stress associated with uncontrollable laughter occurring while she was being reprimanded in work by a superior – an intense discord:

> I remember years ago, I was working as a stewardess on the ships and I had forgotten a couple times to sign documents for the customs, so I was brought up to the captain and he was telling me how important it was to sign it and I started laughing. But I wasn't being rude, I was laughing with nerves. He wasn't a bit pleased. I had to go back up and apologise. I explained that it really wasn't because I was being rude, or ignorant, or mocking him, it was because my nerves got the better of me. I started laughing. But that's happened to me a couple of times. Laughing where you're not supposed to laugh. It's happened to me lots. (Ruth – Interview participant)

Throughout this thesis, it is considered that all experiences of discord are *potential* laughter provocation incidents. This is an important point, as each discordance has the potential to instigate laughter, but may not always, due to a variety of contextual factors which configure the likelihood of laughter.

Discord can be instigated by incidents or events which occur in the physical realm (e.g. laughing at a person injuring themselves),

> I have a tendency to laugh at my kids all the time (when no serious injuries are involved of course)…my son did a little wobble chop thing and tumbled over. He sat on the roadside, holding his leg and there I am, bent over, laughing hysterically. (Anon forum contributor – Google Alerts)

or incidents which exist only in the imagination, such as laughing at a comedian's content. For instance, during an interview the participant (a comedian) explained that he used to talk about slang he heard when he was a child. One expression was 'it's as easy as a dog with a mallet up its arse' So he would talk about this imaginary situation, then fifteen minutes later describe a situation in which there was 'a dog with a mallet up his arse'. He described how 'People would go wild with laughter'.

Some experiences of discord can be interpersonal (e.g. laughing with another)

> a strange sort of snorting sound made me look reluctantly back down the line of relatives…there was absolutely nothing I could do about what happened next. The two of us had to leave the church together - both of us inconsolable, but not for the right reason. It took us about 10 minutes to calm down but it took my mother-in-law a lot longer before she accompanied me to any kind of family function again. (Efrosyni – Managed forum)

And other experiences of discord can be intrapersonal (e.g. laughing at one's own errors)

> I have also laughed and cried at the same time, generally when you find humor in hurting yourself (accidentally). I've laughed until tears and I've laughed until stomach cramps. (Anon forum contributor – Google alerts)

Arguably, discord can also be instigated by an amalgamation of interpersonal and intrapersonal factors, such as laughing to oneself at a comment someone else has made. As such, laughter has potential to occur in response to an extensive range of circumstances, not all of which might be humorous to an onlooker. Indeed, the mother who described laughing at her injured son (above) followed up by explaining that she got disapproving looks from a concerned neighbour.

Whilst some of the above scenarios may seem a little unusual, laughing in typical circumstances, which has formed the primary focus of this study, is more accurately conceptualised as a discord management behaviour which is contingent upon a rapid evaluation of the context in which the discord occurs. It is important to note at this introductory stage that the concept of discordance and its role in the laughter process was an emergent concept in the current theory. Whilst discordance has been introduced here, it not because it was a preconceived notion, rather, the concept earned its way into the overall theory through its regularity of occurrence in the data and through its interchangeability with other indicators. In other words, I became confident through my research that it was a fundamental principle as it could be seen to occur in conjunction with laughter across multiple scenarios, which otherwise would have differed starkly.

The act of laughing (and associated negotiation of discordance), therefore, is indicative of a multi stage process, which contributes to the aforementioned shifting of psychological states. However, before considering examples of this multi-stage process in chapters 6 and 7, attention is first given to the primary subject matter of this thesis – the laughter itself.

The theory has identified and incorporates three types of discord. Primary, secondary and laughter provoked discord. Primary and secondary discord are similar in the current theory in that laughter can be used to negotiate these experiences of discord.

1) Primary discord is that which instigates semi-reflexive laughter. This is the form of discord which is predominantly referred to in the current theory.

2) Secondary discord does not instigate semi-reflexive laughter. Rather, it reflects forms of discord which may co-occur alongside primary discord and which may not seem to be obviously related to laughter on first consideration. An example which incorporates the two is a parent telling a joke (primary discord) in order to distract a child from the pain of a scuffed knee after a fall (secondary discord). Secondary discord can also be negotiated using goal-oriented laughter. For example, the act of using goal-oriented laughter to negotiate the social awkwardness (secondary discord) of a poor-quality joke (primary discord) after which one feel obliged to laugh.

3) Laughter provoked discord is that which is created as a consequence of laughter, but is not negotiated by laughter (e.g. perceptions of being ridiculed). This form of discord is not one of the primary concerns of the current theory as laughter does not negotiate this form of discord.

It may not be of explicit interest to an individual while they are engaged in laughter that they may be responding to the presence of a point of discord, or that they may indeed be creating an experience of discordance for another through their own expression of laughter. Indeed, it may not be in the service of those who enjoy and welcome the experience of laughter to recognise the powerful effect of discordance, as there is nothing which kills a joke more readily than predicting the point of conflict in advance of the presentation of the punchline.

Once the co-occurrence of laughter and discordance became apparent in this research, that relationship quickly and reliably patterned out across the data in a broad variety of situations. These situations are as varied as couple's laughter during sex, when sensuality was accidental interrupted by discordant bodily sounds:

> No one is perfect when it comes to having sex, people do funny stuff. People make mistakes, end up in awkward positions, make weird noises, etc. That's part of the fun of it and you've gotta be able to laugh it off. (Anon contributor – Reddit.)

Or, laughter as a consequence of a disparity between great efforts being spent on a task and its unexpectedly poor results:

> I spent ages baking a birthday cake on Friday. I was up icing 'til after 11pm and had been on my feet all day baking and prepping for the party, so I was totally exhausted. The cake was supposed to be a blue cake with the Superman badge on it, then a Spiderman cake with The Incredible Hulk bursting out of the top, but it just fell apart. My husband walked into the kitchen and we both looked at my half day of work and just cracked up laughing. It was so crap! (Anon contributor – Reddit)

As was also mentioned earlier, there are several stages involved in the process of negotiating discordance. However, before any laughter occurs, there are particular processes which take place:

1) An experience of discordance (Current chapter)
2) The contextualisation of the discordance (Configuration of laughter - Chapter 6)
3) Reacting to that discordance (Negotiating Discordance with Laughter - Chapter 7)

It is the first of these processes which is the subject of the remainder of this chapter. The remaining two are expanded upon in **Chapters 6: The Configuration of Laughter** and **Chapter 7: Negotiating Discord.**

5.1. Experiencing Discordance

The notion that experiences of discordance have a powerful and reliable relationship to the instigation of laughter emerged so strongly in the continuous analysis of the data, that it rapidly became a saturated concept. However, as was mentioned earlier, one does not always laugh at every point of discordance which is experienced, so there is clearly more to the process.

For instance, failing to laugh at a stimulus does not mean that one has failed to experience a point of conflict in the situation. Laughter is but one of an array of potential behaviours, which can occur in response to a cognitive and/or emotional discordance. The extent of the discordances which one may, or may not laugh in response to can range from threat to life, with such threat being at the upper end of the scale of discordance, to mild discordance, such as spilling a drink, at the lower end of the scale.

Whilst it may seem to be common sense that one tends not to laugh at a threat to life, this phenomenon does occur, as the quotation from an online discussion forum shows:

> I had gotten in a car accident with my mother in law. She accidentally blew through an intersection. Luckily, she wasn't hurt and while I still can't figure out what I found funny, while she was standing outside the car looking at the damage, and me holding my head…I started laughing. (Anon forum contributor – Google Alerts)

Negotiating discordance through the use of laughter is a multi-stage process, of which an experience of discordance is an early stage factor. It is a necessary stage (in terms of semi-reflexive laughter)[4], as without that experience, there is nothing to process. However, the experience of discord is not sufficient in isolation to reliably cause laughter to take place. Indeed, a raft of other behaviours might occur in response to an experience of discord.

[4] Goal-oriented laughter is also a means to negotiate discordance, but it differs in that it can be produced at will, without any apparent discordance.

To understand this notion in more detail, it is useful to consider developmental factors which are pertinent to the experience of discord. Whilst we are each born with a rapidly developing set of cognitive, social and emotional resources, we do not come in to the world fully prepared for every eventuality and lifespan development is a constant learning process, during which these resources are developed into skill sets (Gillibrand, Lam, & O'Donnell, 2011). There are certain aspects of the human behavioural repertoire which will require that one will have reached a sufficient level of development or learning before one can react to unique incidents of discordance in reasonably appropriate manners.

Laughter is but one such behaviour, which at its most fundamental level is a universal and instinctive action. As was mentioned earlier in the introduction to the phenomenon of laughter, ontogenetically, laughter has been shown to occur pre-verbally in typically developing infants from as early as 2 months of age (Deacon, 1997). It also occurs amongst congenitally deaf and blind children during a similar time frame (Eibl-Eibesfeldt, 1973), supporting the notion that the behaviour of laughter can occur without visual or auditory learning cues. However, although the first laugh tends to occur innately in and around the same stage of development, I propose that fine tuning when it is useful and appropriate to laugh is a learned skill.

Infancy is a useful stage to begin with when exemplifying discordance experiences as an early aspect of the laughter process, while concurrently exemplifying early incidents of the socialisation of the laughter behaviour. Fortunately, video recordings of infants' first laughs are plentiful on the internet and such non-experimental settings are wonderful resources for ecologically valid data.

A useful case study is a publicly available video on YouTube (Mandkyeo, 2011), which shows an infant reacting to the shocking noise of his mother's nose blowing. In the recording, the infant displays a shocked face and bodily reaction to the noise. It is readily identifiable as a startle display, such as that described by Franchin, Agnoli, & Dondi, (2013).

> His mother is aware of his discomfort and throughout the entire video, she appears to soothe the infant through a 'motherese' tone (Papousek, Papousek, & Symmes, 1991). When the startling nose

> blowing sound has stopped, following his mother's verbal soothing, he laughs.
>
> His mother blows her nose again and he is shocked a second time. This time he laughs for less time and his laugh looks less comfortable, as if he's trying to get further feedback from his mother as to how he should react. The third nose blow doesn't result in a dramatic startle reaction, but he is still fully engaged with the noise. After a pause of about 1 second, he laughs again. The fourth time, he recoils again and makes a sound which sounds close to a cry. This 'cry' is once again soothed by the mother's intonations and quickly reverts back to a laugh again. (Researcher's notes on video)

The infant's laughter vividly marks a discordant sound and a novel experience[5]. It is an observable behavioural reaction to the perception of a discordant stimulus. The video offers convincing evidence of the infant's experience of a point of discordance, just as it exemplifies how he conextualises it with the aid of social cues and finally, how he reacts to it, points which will be discussed later.

The close relationship between discordance and laughter, which is exemplified above, becomes so embedded throughout the lifespan that we have a strong urge to seek and find the source of discord when we hear another person laugh, as not locating the source of discord may leave one in a vulnerable position. This is likely to be the source of people 'wanting to be in on the joke':

> My son or husband will come into the room that I'm in and ask me what are you laughing at? (Anon online commentator)

This fundamental relationship may even be the most basic root of the complex sense of ridicule, a laughter provoked discord which people feel when they feel that they are being laughed at. Such laughter essentially symbolises that others can see a point of discord in one's own behaviour, an experience which can be emotionally challenging and which can fundamentally alter socially informed behaviour going forward. Billig (2005) did an excellent job of examining the relationship between laughter and ridicule, however, my own thoughts on the matter are that Billig's main argument refers more to the intellectual

[5] It is accepted that after the first experience the event is no longer truly novel. However, as discussed in section 5.3.3. Habituation, children habituate more slowly to novel stimuli than adults.

act of ridicule, which can be entirely verbal and devoid of laughter, as opposed to the basic act of laughing when ‘Person A’ does something which makes ‘Person B’ laugh.

This point is enhanced by considering the following two quotations from the same participant. The first of these describes strong emotions related to an event in Kathryn’s childhood.

> I felt that they didn’t have a right to laugh at me, because I didn’t notice for a very short time that my CD didn’t work. It's not even a thing that implies that I'm stupid. They were laughing at me like I was such an idiot, so I felt extra pissed off, because I didn’t even deserve the laughter that they had, or the judgement that I was doing something idiotic. (Kathryn)

The second quotation refers to Kathryn’s ongoing reactions to laughter as an adult. It speaks of an experience of linking the sound of laughter to a feeling of being judged, which she continues to experience. Evidently, this sense of laughter being indicative of a judgment can be activated even in the absence of evidence to support this belief, coupled with an awareness that the emotional reaction is irrational.

> Sometimes you see people and you haven't even done something stupid and they're laughing and you think 'they're probably laughing at me'…Why would you think that? I don’t know, but I presume that you think that because you presume that people are looking at you and judging you, when normal people are just living their lives and they don’t care. (Kathryn)

It seems that the urge to isolate the source of laughter provoking discord is also the root of the sense of being judged which some people may feel, even if they cannot be sure that the laughter of others is in relations to them. These suggestions are reinforced by the tendency for people not to laugh without a reason to do so and the stigma of social judgement attached to those who apparently laugh at nothing:

> It doesn't hurt her. It doesn't do anything, besides making her look loony when she starts to seemingly laugh for no reason out of the blue. (Anon online commentator)

The description above of ‘loony’ by a commentator with regards to his wife’s out of context laughter is indicative of the experientially informed implicit knowledge which people hold of discord recognition as a typical factor in the instigation of their own laughter. Indeed, when people witness others laughing for no apparent reason, it can make them feel uncomfortable, as evidenced by the following samples from a stream of negative reactions on the social discussion website Reddit to a viral video of Berliners apparently laughing for no reason on a train:

> - I felt *incredibly* uncomfortable, so much so that I had to turn it off midway through.
> - Most terrifying video I've seen in a while.
> - You're not the only one, this video actually made me feel really uncomfortable. The laughter seemed really artificial and it was weirding me out and I had to shut it off. It grated on me for some reason, gave me that "heebie jeebies" feeling after a little while.
> - Mass hysteria is creepy as fuck
>
> (Reddit, 2011)

Having the luxury of recognising a concrete incident of discord allows one the opportunity to alter behaviour to remove or avoid that discord or learn from it if it is related to one’s self and the learning is adaptive. Not knowing the source of discord has the potential to leave one with a sense of confusion and insecurity, states which are handled in different ways by different people. These individual differences are perhaps one reason why some people are prone to suffer from gelotophobia (a fear of being laughed at) whilst others enjoy being laughed at (gelotophilia) (Proyer, Wellenzohn, & Ruch, 2014).[6]

Contrary to the above reactions to inexplicable laughter on a train however, not everyone found the out of context laughter to be uncomfortable. Many people found themselves laughing along with it. I propose that in such cases, rather than the laughter simply being described as ‘contagious’, the laughter was experienced as a point of laughable primary discord in itself.[7] Whilst the quotations above exemplified negative reactions to the discordant laughter, the quotes below show that some people negotiate the discord of inexplicable laughter with laughter of their own:

[6] Individual differences in reactions to laughter are discussed in greater detail in Section 6.3.4.
[7] See section 3.1. for comparison of primary and secondary discord.

- I thought it was stupid, but at about 2 mins in I burst out laughing... It works! LOL!!!!!
- Fuck that, I'm laughing *at* them.
- Did anyone else start laughing and have to stop the video so people wouldn't notice/ask what you were laughing at? I wouldn't want to say "oh yeah…I'm laughing at…well...laughing" (Reddit, 2011)

Considering the possibility that it is the out of context laughter itself which is the point of discord suggests that it is worth rethinking the concept of purely contagious laughter. While the notion of contagious laughter is experientially sound – after all, most of us have been caught up in what feels like contagious laughter, such laughter is not contagious in the sense of it having some essence which can be transferred from person to person, like a flu virus transmitting through bodily excretions. Contagion alone is not a sufficient explanation for laughter which transmits through the ether amongst groups of people.

Rather, in the example above, it is the discordance created by the lack of context to the original laughter (one does not expect a typical train load of passengers to laugh for no reason), coupled with the safety net of a recognition of a reasonable level of discord, in that the people are laughing and not crying, which makes available the possibility to negotiate one's own experience of primary discord through laughter. This possibility, like all potential laughter provocations, is subject to social and personal configuration, as the contrast between those who hated the video and those who laughed at the video shows. This configuration is also exemplified by the final quote above, with the person having 'to stop the video so people wouldn't notice' them laughing inexplicably.

In a less detached setting, such as with 'contagious' laughter amongst people who know each other, or who are at least interacting socially, I suggest that such laughter is traceable back to a clear point of primary discord, such as an attempt at humour, resulting in laughter which I would categorise as semi-reflexive. It is also the case that the context in such social situations allows for a temporary disinhibition of laughter in response to particular social laughter parameters, a point which is explored in more

detail in chapter 6, in the discussion of laughter's configuration. Hence, the interactors would be more likely to laugh.

Furthermore, some of the laughter in what appears to be a bout of 'contagious laughter' could be goal-oriented, whereby there is a level of the discord contained in the social situation itself, a potential secondary discordance. This could result in goal-oriented laughter, in an attempt to negotiate the inherent challenges of the social situation. Goal-oriented laughter isn't as likely to originate from a primary discord, such as a 'humorous' laughter provocation attempt, yet to a detached observer, it might look and sound like 'contagious' laughter.

An extreme example of apparent contagious laughter was the 'laughter epidemic' of Tanganyika in 1962, in which schools had to be shut down for extended periods due to uncontrollable 'contagious' laughter spreading throughout parts of the country. Undoubtedly, there were cases of multiple people laughing hysterically for no apparent reason. However, the explanation of laughter contagion in that case, despite outwardly appearing to be an unequivocal account, was rejected by Hempelmann (2007), who stated:

> Most current representations are flawed by their exaggeration and misinterpretation of the role of laughter in the event… identifying it as contagious laughter. It is argued that the event is a motor-variant case of mass psychogenic illness of which laughter is one common symptom (Hempelmann, 2007, p. 49)

Indeed, it was suggested that the 'symptom' of laughter was brought on, not by a funny stimulus, but by an anxiety laden sociocultural context. Whilst Hempelmann's explanation provides a convincing argument for a psychogenic illness, the fact remains that laughter did occur (albeit often alongside crying) and the source was a collective experience of discord.

'Epidemics of hysteria' have been compared to the threat avoidance strategy of stampeding in the animal world (Boss, 1997). Boss goes on to explain that such hysteria presents itself in a variety of ways:

> in which two separate mechanisms are at work: an anxiety variant, in which abdominal pain, headache, dizziness, fainting, nausea, and hyperventilation are the most common symptoms, and the motor variant, with common symptoms of hysterical dancing, convulsions, laughing, and pseudo seizures (Boss, 1997, p. 234).

Whilst the above scenario is an extreme example, in a general sense, I suggest that social interactions, by nature of the fact that they present the interactors with a bombardment of stimuli, such as sights (e.g. facial expressions), sounds (e.g. speech), thoughts (e.g. interpretations, discomfort with proximity) which would not exist in a solitary setting, offer up more opportunities for more experiences of discord. Hence, attempts to negotiate the social situation, which present as increased bouts of laughter, can be mislabeled simplistically as contagious laughter.

Indeed, previous research has gone into some depth exploring the relationship between laughter and groups and has found that not only does group size have an impact, but so too does gender, room size, density/proximity of the group and age influence the amount of laughter in such group situations (Aiello, Thompson, & Brodzinsky, 1983; Dezecache & Dunbar, 2012; Mehu & Dunbar, 2008; Provine, 2013; Stokols, Rall, Pinner, & Schopler, 1973).

Just as there is great variation above with regards to sources of apparent laughter contagion in large groups, examples of incidents of discordance occurring prior to laughter (in any group size) are broad in their underlying source. To follow is a sample of some of the diversity of laughter instigating events which arose in interviews in the current study:

Table 5: Diversity of Discordance

Incident	Suggested point of discord
“A friend of mine just got married and it was joyous. Everyone was really happy, so I went up to her and I said 'I think your marriage is wonderful. Do you think it'll last through the day?’” B.G.	An expectation from the audience (who laughed) that B.G would have offered a standard congratulatory comment, which wouldn’t imply an impending

	divorce on the day of the marriage. Instead, he suggested the opposite.
“Myself and my sister fell out of a canoe and we got hysterical. We really were hysterical. We couldn't get out of the water. We were swallowing water and laughing.” (Mandy)	An expectation that when paddling a canoe, one will not fall out. Instead, the canoe tipped over and ‘hysterical’ laughter ensued.
“People do come up with some good ideas and what we do is steal them and reproduce them and send them a little note saying 'Life is crap, we stole your idea’” (Steve)	An expectation from me as interviewer that a successful ethical organisation would reimburse people for their work, not gloat at having stolen their idea – an idea which instigated laughter.
“We'd a little boy, only just started…and he didn’t know us at all. So, he was sitting over there, on his own, playing with cars. He was OK. There were no signs of obvious upset. Apart from the fact that he was on his own maybe. I sat on the chair and Tim came and pushed me over. The new boy roared laughing at that because it was just funny to see an adult doing something silly.	An expectation that adults do not get pushed off chairs by little children. Instead, a young child was allowed to tip the adult off and the new boy laughed.

Based upon this and similar data, it is proposed that one must experience primary discord in the first instance with regards to semi-reflexive laughter. None of the above examples would have resulted in laughter if the incidents were not discordant with expectations. What is also interesting about each example is that contrary to the laughter response which did ensue in each case, alternative responses might have readily occurred.

An observation about the precariousness of a new marriage could have been taken as an insult. Falling from a canoe could have resulted in panic and fear. A comment about stealing other people's ideas could have resulted in shock or disgust and a Montessori teacher could have reprimanded a young child for tipping her off a chair. However, it was the second stage of the discordance negotiation process – contextualising discordance (discussed in chapter 6), which allowed for a laughter reaction.

Prior to progressing to that discussion however, consideration is now given to the underlying processes which may be making the experience of discord possible in the first instance. In this regard, the inclusion of extant literature has proven to be invaluable. Whilst the primary data collected in the current theory (such as that presented above) showed time and time again that there is a powerful relationship between discord and laughter, what these data could not explain is the psychological mechanism behind this relationship. To explore that factor, attention is now drawn to a proposed means by which this mechanism occurs.

5.2. A neurocognitive path to experiencing discord

Whilst the above examples, along with multiple other incidents of discord preceding laughter arose in the course of the current study, the matter of how one comes to experience an incident as discordant with expectations, benefits from the integration of extant theory, which offers a valuable insight with regards to possible processes. The current section focuses upon experience of primary discord – that which tends to instigate semi-reflexive laughter. Secondary discord is discussed in more detail later in chapter 7 in terms of negotiating discord and shifting states, as it is most relevant in this regard.

I wish to propose that the process of event segmentation (Schwan & Garsoffky, 2008) offers clues as to how the experience of discordance, which has potential to lead to laughter, may take place in everyday life. I do not suggest that this is the only possible explanation, yet I believe that it fits well with grounded data which emerged in my own research, in that it treats the idea of the violation of expectations as part of a process which includes not only prior learning and personal traits, but also current situational and environmental factors.

The concept of prediction errors in general may be a viable and encompassing explanation for the experience of discord on a neurological level - “When outcomes match predictions, learning is not required. When outcomes violate predictions, animals must update their predictions to reflect experience” (Eshel et al., 2015, p. 243). However, some outcomes are best not integrated as new working models of the world and are perhaps best rejected on the basis that they are atypical, or they are at least treated in the future as highly unlikely scenarios to occur again in the future. In some scenarios, laughter may well be an ideal tool for shifting paths in the memory consolidation process and marking or flagging the outcome as atypical (see chapter 6 for further discussion on this point).

Indeed, in many scenarios atypical outcomes are laughed at, as the following quote referring to a discussion about ‘inappropriate laughter’ exemplifies:

> In an office with my co-worker, which is panelled glass so we can see out (particularly the elevators). This lady comes and steps out of the elevator, trips and falls while carrying a bag of marbles (I can't explain that). The marbles go everywhere and we start laughing our asses off. (Anon – Redditt)

Clearly, in the example above, a typical expectation (based upon past experience) would have been that people depart the elevator without incident. Furthermore, even if one were to have in mind a range of potential outcomes which included the possibility that people may occasionally stumble or fall, the expectation in an office scenario might be that they would drop bundles of papers, not a bag of marbles which would scatter dramatically across the floor. It is my proposition that the laughter in the above scenario not only serves to shift the emotional state of the laughers (see chapter 6), but it also marks a rejection of this scenario as being typical. The laughter may even be an implicit means to disrupt the encoding of this scenario as a likely future event (a proposal which is explored in greater detail in Chapter 6 with regards to memory reconsolidation interacting with emotional states).

Event Segmentation Theory (EST) explores how people 'automatically segment episodes into units' (Zacks & Sargent, 2010, p. 255). In addition, the approach conceptualises the experience of prediction error as part of an ongoing iterative process, rather than an instantaneous stimulus/response learning mechanism.

As an individual experiences the world around him, he cognitively splits the stream of unfolding experiences into short segments, which are marked by event boundaries, or meaningful joints in streams of consciousness (Schwan & Garsoffky, 2008). The selection of these boundaries is not only informed by the unfolding realities of the context, but also by personal schemata of likely outcomes. These schemata of likely outcomes will have been constructed through experience.

According to Zacks & Sargent (2010, p. 258), Event Segmentation Theory (EST) suggests that "predictions about the near future are guided by WM [working memory] representations of the current event, which are updated in response to transient increases in prediction error." They go on to state that,

> the experience of an error spike and consequent updating is perceived as a boundary between meaningful events. Thus, event segmentation is an ongoing perceptual mechanism standing at the centre of attention, cognitive control and memory. (Zacks & Sargent, 2010, p. 258)

It is proposed in the current theory that EST is relevant to laughter, as it is a mechanism by which unfolding incidents in the stream of consciousness are recognised as being discordant with expectations. In essence, the stream of consciousness is not entirely passive, as it is influenced by predictions of future events, which are informed by prior experience. It makes adaptive sense to predict unfolding events before they occur and to adjust behaviour in accordance with those predictions, rather than being a passive onlooker or purely reactive player in a dynamic world. As Jeffrey Zacks explains:

> For lots of everyday perception and cognition, being able to predict what's going to happen in five seconds allows you to do things like reach, or change your path, or speak in a way that anticipates the changes that are coming in the environment. We're always trying to look over the horizon and the further you can look over the horizon, the more adaptive that is…by the time you can predict what's coming in fifteen seconds, you start to look like a pretty smart animal. (Hernan, 2011)

A driver, for instance, will come to expect particular patterns whilst navigating the roads and build those into his/her schemata. An example might be stopping at an amber traffic light, an action informed by a prediction that the light will soon turn red and cars will shortly start crossing the opposite side of the junction, thereby presenting a potential hazard. Events with stable patterns, such as the colour changing cycle of traffic signals, will have what Zacks & Sargent (2010, p. 261) refer to as "group typical segmentation…which may be assumed to reflect intrinsic structure". Whilst, in their chapter, Zacks & Sargent (2010) were referring to archetypal segments in movies, which would be recognisable to a typical cohort, the reality is that there are idiosyncrasies, even with regards to what might be 'group typical segmentation'.

Of particular relevance to the current theory's forthcoming emergent concepts of the *Contextual Laughter Configuration Matrix* and *Individual Laughter Range* is Schwan and Garsoffky's (2008) explanation that:

> the definition of event segments results from a complex interplay of both characteristics of the observed event and of personal factors, the latter ranging from stable cognitive traits to observational goals, prior knowledge, and mood states. (Schwan & Garsoffky, 2008, p. 392).

In the road traffic example offered above, this idiosyncratic nature might be represented by a risk averse person being responsive to prediction errors (having mistimed a light in the past) and stopping at an amber light to avoid a potential accident, whilst a risk taker might break the red lights with the belief that there is plenty of time to cross the junction (having gotten away with it in the past). Furthermore, either driver might be in an aroused mood, or a depressed mood, which may alter their perceptions of the risks associated with the intrinsic structure of traffic light signal timing.

Despite such factors as personality, past experiences and mood having an influence upon the process of event segmentation however, it is not the case that all violations of idiosyncratic expectations are simply discounted. Such violations can be valuable moments of learning. Zacks (2010) states that EST proposes that:

> having ill-fitting event representations leads to transient increases in prediction error. When these occur, the system responds by updating working memory to form a new set of event representations. Prediction error returns to a low level and perception proceeds as before (Zacks, 2010).

In other words, when expectations are violated, discordance is recognised through a process of increased error recognition and the cognitive system incorporates the new understanding into future predictions, allowing new learning to take place and the stream of consciousness to proceed as before. This cognitive technique works well for incidents which can reasonably be incorporated into revised internal models of how the world works. Indeed, it may sometimes be imperative for survival that revised models are incorporated.

For instance, despite his traits, the risk-taking driver might reasonably learn from the experience of a near miss on a traffic junction that the event boundary of an amber light and the feeling of tension as he considers ignoring the event boundary and considers speeding up is a risk no longer worth taking. Learning has taken place and this learning is likely to aid in safe junction crossings in the future. However, as with the marbles falling

from the elevator incident mentioned earlier, it is not adaptive to incorporate all new incidents as templates for revised internal models.

I propose that whilst the marble event described above was recognised as discordant with expectations, the peculiarity of the incident (likely informed by its large divergence from a parallel schema that most people do not stumble out of elevators while spilling marbles) interfered with the process of consolidating the incident into a revised set of expectations. It would not be of adaptive value to consolidate such an unusual and absurd event into memory as a representation of how visits to the office typically occur. It is my proposition therefore that having recognised an incident as discordant, *one method* of dealing with irreconcilable event boundaries which are better rejected than incorporated, is by laughing.

There is an emphasis in the preceding paragraph on *one method*, as it is not a proposition in the current theory that laughter always occurs, even under what may appear to be the most ideal of circumstances. Certainly, the integration of EST into the current theory is useful in offering a mechanism by which discordant incidents are recognised, however, once the discordance is recognised, it is still at the stage of being a *potential* laughter provoking event. The incident must then be processed by the perceiver in the context of the environmental situation and their own state at that time. There are many occasions when highly unusual events occur, which are discordant with expectations, yet the perceiver does not laugh as a consequence of contextual factors.

Examination of extant literature in the field of neuroscience is helpful in elucidating the potential markers which may represent the cognitive discord which people experience prior to laughter and indeed the lack of these markers when laughter doesn't occur.

The human mind is constantly faced with a barrage of information and the cognitive system continually scours the environment for the purpose of making adjustments to perceptual and attentional resources (Botvinick, Braver, Barch, Carter, & Cohen, 2001). This process of cognitive control ensures that the cognitive system is adaptable to ever changing contexts, to which it adjusts by assigning resources to what is judged to be the most relevant task.

Cognitive resources are allocated to any of a vast number of challenges which present in the constant stream of consciousness. Neurocognitive studies of event-related potentials (ERP) have shown how rapid electrical activity in the brain occurs within a matter of milliseconds when an individual is presented with an unexpected (discordant) stimulus (Uekermann, Daum, & Channon, 2007). This rapid processing and electrical signature (referred to as the P300) is, under certain conditions, followed shortly afterwards by another electrical activity (N400), which it has been proposed, is indicative of the search for meaning (Federmeier & Kutas, 2001). The gap between these two ERP may well be the neurocognitive evidence for the experience of discord (P300) and the contextualisation of that discord (N400). Indeed, a conference paper which described a limited pilot study showed that the presentation of jokes which did not elicit laughter did not show evidence of the N400, whereas those which did result in laughter did (Derks, Gillikin, Bartolome-Rull, & Bogart, 1997).

Whilst the nature of neurocognitive activity is of great interest with regards to the underlying processes which are related to laughter events, there is a recognition that the nature of laughter outside of the lab is rather unpredictable. The following chapters explore the nature of laughter in the context of everyday life.

5.2.1. Summary

To recap, I propose that the implicit knowledge of laughter being representative of discord is so commanding, that people can feel judged when they perceive laughter to which they are not a party. Furthermore, I propose that this is the basis of the sense of ridicule people experience when they feel that they are being 'laughed at'. For the potential for laughter to exist, one must first recognise that an incident is discordant with expectations and it is after this recognition that the discordance is contextualised, before a suitable reaction, which may or may not be laughter, occurs.

EST is potentially the cognitive basis of the experience of discordance, and thereby, the recognition of potential laughter instigators. As incongruity theory has previously advocated, it is the mismatch between what one might expect to occur and that which actually does transpire (or is imagined to transpire) which is the basic stimulus for laughter (Lewis, 2005). However, incongruity theory is typically assigned to explanations of humour, and an element of 'playfulness' are embedded in the notion of incongruity instigated humour.

According to Mahapatra & Srivastava (2013, p. 25), incongruity theory "postulates that humor is caused due to the playful violation of the subjective expectations of an agent; caused by the presence of incongruous stimuli in the agent's observations". I feel that this is an oversimplification, as there is nothing playful about a person walking 'smack bang' into a lamppost.

However, the current theory set out to examine laughter and not humour, for the very reason that notions such as 'playfulness' may colour the exploration of the grounded data. Consideration of event segmentation expands upon this notion of incongruity by avoiding concepts such as 'funny' or 'playful' and simply offering a neurocognitive explanation as to how one comes to appreciate an incident as incongruent, discordant, or a violation of predictions (depending upon the choice of language).

Finally, as has been mentioned above, there are plenty of discordant events which occur that don't result in laughter. A crucial question to tackle is why not? I propose that this is a consequence of the interaction of the *Contextual Laughter Configuration Matrix* and

the individual's own *Laughter Range*. These are the means by which laughter is configured and these concepts which are the subject of the next chapter.

6. The Configuration of Laughter

The concept of discord contributing to the occurrence of laughter offers a firm grounding in the exploration of laughter. However, a directive of classic Grounded theory is to proceed with theoretical sampling beyond the limiting discovery of a saturated topic (Glaser & Strauss, 1967). This moves the research in valuable new directions and promotes theoretical exploration. This method promoted development in the current study beyond the topic of the previous chapters – the discovery that apparently unrelated and diverse instigators of laughter had the interchangeable property of the presence of discordance.

It also became apparent that there was more to the stimulation and production of laughter than the presentation and consequent recognition of a discordant stimulus. If this were the case, many more people would be comedians and laughter would abound in almost every human interaction. Experience tells us otherwise. Laughter is configured and context is a crucially important aspect of this configuration.

As one interview participant colourfully explained when discussing context:

> If someone came into your office dressed in a chicken suit, beating your desk, you probably wouldn't laugh at them…you'd be concerned, but probably wouldn't laugh at them. It would be something totally unexpected (Daniel).

Furthermore, even despite the fact that laughter can offer a positively valenced feeling "You always feel better after a good laugh" (Anon forum contributor), laughter is not engaged every time an uncomfortable discord presents itself. That being the case, there is evidently a reason or set of reasons as to why we do not simply laugh like automatons in order to make ourselves feel better every time a discomfort or disruption arises.

Despite random circumstances offering a plentiful supply of discordant outcomes, behaviours and comments, not all incidents and interactions lead to laughter. Whilst there is sufficient evidence to suggest that discordance is present in the event of most

laughter, the reverse has not proven to be correct. It is not the case that laughter is reliably present in the event of most discordance.

In a theory focused upon laughter it may seem inconsequential to examine occasions when laughter has not occurred, yet, such observations have offered a valuable point of contrast. Life is awash with occasions when people do not laugh. It is quite apparent in everyday life that people do not laugh most of the time. This assertion is indirectly supported by research which uncovered the frequency of laughter in everyday life. It was found that "On average, participants reported 18 daily incidents of laughter, but with wide individual variations (0–89 incidents)" (Martin & Kuiper, 1999, p. 1). Laughing an average of 18 times per day clearly leaves a lot of time for not laughing.

Whilst a dearth of laughter applies most obviously to the mundane and unsurprising events which make up everyday life, it is also the case that people do not reliably laugh in response to every discordant event which they experience. Examples of events which I observed *not* producing laughter were – a person spilling coffee, another person discovering a credit card didn't work at the cashier desk and another stepping in dog excrement. None of these people smiled, let alone laughed. It is misleading to consider laughter in terms of 'necessary and sufficient' factors which reliably instigate it. There is no such perfect formula – just as there is no perfect formula for a universal expression of happiness (Barrett, 2017b).

It has strongly emerged in the data that it is the contextual situations which configure the opportunity for laughter to be enhanced or impeded, in addition to the influence which such laughter has, rather than a list of factors which reliably cause laughter. By examining laughter through the lens of contextuality, the futility of suggesting that people do not laugh at each discordant event because most unexpected events are not funny becomes more apparent (although that may appear to be the case in a subjective sense). Once discord is recognised, it is filtered through the context of the prevailing situation in which the individual finds him or herself. This contextual situation interacts with the individual's lifelong experiences to temper or enhance the likelihood of laughter occurring as a consequence.

As mentioned in the discussion of EST, in addition to processing the incident through the lens of the intrapersonal and environmental context, there is a tendency for the individual to react in some manner to the incident. However, there is also the possibility of inaction in response to an experience of discordance and this may be a reasonable course of (in)action in some circumstances. Indeed, an individual who is overly responsive to every point of discord may lead an anxious life, whereas an individual who has a level of tolerance to innocuous discord may spend less time experiencing aroused and anxiety provoking states. This may have implications beyond the relatively safe act of laughing.

Indeed, previous research has shown that “Drivers who demonstrated emotional hypo-reactivity had a 2.3-fold greater risk of being responsible for a traffic accident than those with basic emotional reactivity.” (M’bailara et al., 2018, p. 290).

In a related matter, previous research has shown that there is variation in how individuals interpret their bodily sensations, with some being more sensitive to such sensations and hence, more likely to experience anxiety (Power & Dalgleish, 2008). As harmless bodily sensations can be misinterpreted and lead to panic in some people, yet no explicit effect in others, there is scope to predict that different people will be more or less sensitive to points of discord which occur in the environment and the bodily sensations which occur in response. Individual differences will also apply to sensations which instigate laughter, as much as to sensations which may instigate panic.

As was introduced earlier when discussing goal-oriented laughter - with implicit processes configuring the likelihood of laughter and with the nature of the data gathered in this study, it is not possible to state unequivocally to what extent laughter is a cognitively or emotionally instigated behaviour. Such a consideration is reminiscent of the Zajonc-Lazarus cognitive/emotional primacy debate (Yiend & Mackintosh, 2005, pp. 499-503). It is likely that laughter which is emitted in different contexts engages different cognitive and affective systems. In line with my suggestion of the role of EST, I suggest that even in the case of apparently spontaneous reactive laughter, some level of rapid processing, which situates the individual in their context at that time, will have preceded the behaviour of laughter. However, as Power & Dalgleish (2008) suggested in their analysis of the primacy debate:

> The “emotion” and the “cognition” are integral and inseparable parts of each other and although it is useful to use different names for different aspects of the generation of emotion, the parts are no more separable than are waves from the water in which they occur. (Power & Dalgleish, 2008, p. 59)

With regards to responses to discordance, there are two categories of ‘reaction’ which have emerged as being relevant. There is the conscious reaction, which may be a decision to attempt to restrain a response (including the possibility of laughter) when the individual is aware that the laughter is inappropriate in the social circumstance, yet she experiences the contradictory feeling of wanting to laugh, such as in the example below:

> My sister was dying, so it was a very serious situation. The priest said, 'Is it OK if I say a decade of the rosary?' and I thought 'Oh no!' Well, I thought I'd get away with it because they might think I'm crying, but my face was twisting [holding in laughter]. (Antoinette -Interview participant)

Reaction in the other sense is the implicit cognitive-emotional process which motivates the individual to respond to the degree of discordance which has been experienced, in a manner which (ideally) fits the circumstance which has presented itself. The response, given the conditions, may or may not be laughter and could be anger, or sadness, as the following blog article (found with Google alerts) shows:

> “Why do you talk like that, *retard?”* they sang. The question was accompanied by unintelligible gibberish and offensive hand gestures. Though they may have been entertained by their own cleverness that day, I had encountered the circumstance enough times that it no longer provoked their desired effect — tears, usually, followed by angry and violent retaliation. (Lacke, 2014)

However, even reactions such as tears or anger can be overridden by conscious decision making, as the continuation of the above quotation shows:

> This time, I decided, I’d try a different response: “I’m deaf and I was born in Texas,” I chuckled. “Put them together, and this is what comes

> out. Pretty funny, huh?" Silence came over the group. I could see the confusion in their eyes: *Wait, she's laughing? Where is the crying? Where are the punches? This isn't fun anymore*. Thirteen years of being laughed at came to an end when I started laughing too. (Lacke, 2014)

In this case, the girl who was suffering from distress associated with regular bullying, decided to switch from what had up until that point seemed like an automatic anger reaction to an alternative response in which she chose to challenge adversity through the use of laughter. It was not a case of the bullying suddenly becoming funny to her. The situation was similar to previous experiences, but the girl's thought process had changed. She had used humour to set up a primary discord, which allowed her to chuckle and she used her own laughter to negotiate the secondary discord of bullying.

Having experienced alternative ineffective responses to bullying, she was now in a position to test a new response. Her psychological context differed and it was the belittling of the bully's actions, *combined with laughter* which proved to be most effective. This was learning which she could incorporate and implement in future contexts in which laughter might not have seemed to have been an option before.

Just as anger was no longer a deterministic response to the situation described above, laughter is generally not a deterministic response to the presence of discord, or to the situational context, as the individual's own motivations can override the influence of either. Laughter is therefore one of an arsenal of semi-reflexive behaviours which can be called upon to negotiate discordance.

Our experiences of discordance exist within a contextual framework, as discord is a factor which has many degrees of potency and it is sensible that our responses to discord are dynamic. Not all discord is as stimulating as the experiences of bullying above. For example, as I began to write the current section, a fly landed on my computer monitor and walked across the centre of it. This event was unpredicted and discordant with my experience of typing words with the expectation that only words would appear on the screen.

I did not laugh, nor did I become angry. However, I did not ignore the novel and discordant circumstance which I was experiencing. I brushed the fly away and continued about my work. I was not aware of any tension, yet there was sufficient psychological arousal to motivate a behaviour on my part, which resolved the situation.

Why did I not laugh? If laughter were merely a stimulus response mechanism, then one explanation might be that the event did not provide a sufficient level of stimulation required to instigate laugher – the extent of discord experienced was not enough to reach a minimum activation threshold. Perhaps the event did not disturb me to an extent which caused an arousal in my affective state which would have benefitted from any further processing, the likes of which laughter provides through emotional shifting (see chapter 7). It was however the basis of enough arousal to cause a shift from concentrating upon a task, to focusing upon and dealing with the distraction. My reaction was sufficient and appropriate to the circumstances. Anything more might have been a waste of resources.

The ability to laugh may be innate, but the implementation of that ability is a matter of contextuality. Since the experience of discord does not always result in the same reaction, it follows that there must be costs associated with laughing in response to every discordance (e.g. laughing at an approaching Grizzly bear poses life threatening costs). Likewise, there are benefits to laughing at appropriate discordances, for example, laughing with another person can lead to future rewards such as increased intimacy and enjoyment of subsequent social interactions (Kashdan, Yarbro, McKnight, & Nezlek, 2014).

In summary, one does not react to every anxious situation by crying, or to each frustration with rage, yet, in the correct context such reactions are advantageous. The same is true of laughter. There are times when laughter is limited in its effectiveness and appropriateness as a tool for negotiating discord. A theme which runs throughout this thesis is that laughter serves its function well when its purpose goes unnoticed – in other words, when it is appropriate to the context. The remainder of this chapter is an exploration of the primary concepts which configure the occurrence of laughter.

6.1. The Contextual Laughter Configuration Matrix

Laughter does not occur in isolation. Laughter is configured by a myriad of influential factors, not least of which is the psychology of the individual. The process of negotiating discordance is dependent upon the influence of the individual's own ***Laughter Range,*** which is nested within the ***Contextual Laughter Configuration Matrix*** – concepts which incorporate the predominant factors which make the occurrence of laughter more or less likely at a given time. These concepts will now be explored in greater detail.

The Contextual Laughter Configuration Matrix is a conceptualisation of the dynamic range of factors which influence the likelihood of laughter's occurrence, as well as its form and consequence. It is the prevailing system within which laughter occurs or fails to materialise. This concept represents the interaction between the intrapersonal, social and situational factors which have emerged as being salient to laughter.

Laughter is not a prerequisite reaction to a definable set of circumstances, but a potential outcome in a dynamic system. Whilst laughter occurs in an instant, the factors which manipulate its occurrence take shape and transform over a broad timeframe. The potential laughter event and its consequences are nested within and influenced by the individual's *Laughter Range*. This concept represents the individual differences which make each person's potential for a laughter reaction to discord unique. The individual laughter range is in turn nested within and influenced by the broader Contextual Laughter Configuration Matrix.

Despite there being a series of stages in the laughter process , the influence of the individual laughter range and the wider contextual configuration matrix ensure that this is not a linear set of interactions, a notion which holds some similarity to the approach which Mayne & Ramsey (2001b) take in their discussion of a 'Nonlinear Dynamic Systems Approach' to emotions:

> Understanding the dynamics of the storm, and even more important the path that it will take, means not just identifying the pattern but also understanding its evolution over time. Discrete patterns are the starting point, but defining the patterns necessary to characterize it and understand how the parameters unfold over time is the key to

> understanding weather [and similarly - emotions] (Mayne & Ramsey, 2001a, p. 6)

Just as dominant weather conditions can lead to storms or to sunshine – sometimes the prevailing situational and personal context leads to laughter, sometimes to laughter suppression and at other times to tears, or other responses. Understanding why one has occurred at a particular moment in time, while the other has not, requires a broad view.

The role of individual differences with regards to the experience and contextualisation of discordance was already introduced in chapter 5 in terms of predictions about events in the near future being influenced not only by sensory inputs, but also by traits interacting with the learned experiences of the individual (Zacks & Sargent, 2010). Individual differences which arose in the current study are examined in more detail in **section 6.3.4**, after which, the social and situational factors which interact with individual differences to form the wider contextual laughter configuration matrix are explored.

6.2. Individual Laughter Range

Introduction

Developing the social, emotional and cognitive skills which guide the use of laughter as a discord negotiating tool is an ongoing developmental and learning process. The interplay between laughter's innate manifestation and the influence of environmental experiences results in each individual developing their own moving average for when they laugh, and under what conditions. I term this concept of an individualised tendency for laughter the *Individual's Laughter Range* (ILR henceforth).

A related, but distinct concept, is that of 'sense of humour'. This concept has been well researched in terms of the general study of humour, in which humour creation ability (Edwards & Martin, 2010) and humour styles (Frewen, Brinker, Martin, & Dozois, 2008) are understood to have different properties. Sense of humour, or humour styles, are reflective of an individual's reactivity to perceived humour, while humour creation ability is reflective of an ability to generate circumstances and conceptual materials which other people rate as being humorous.

Neither one of these notions requires laughter as an essential constituent for a confirmation of humour. Certainly, many humorous circumstances lead to laughter, but many merely result in smiles. In some cases laughter provocation attempts may even result in anger if, the audience to the humour attempt fails to interpret it as funny but understands it as shocking, as a participant in the research of Friedman and Kuipers (2013) portrayed when describing the comedy of Hans Teeuwen, who is considered a 'confrontational comedian':

> The first time you see his show you are a little shocked. But when you start understanding, then…He is so sharp, that when people don't understand they just get very angry. (Friedman & Kuipers, 2013, p. 185)

The notion of humour is not necessary for the proposition of an ILR. As Provine (2000) showed through his covert study of people laughing in naturalistic settings (although he

had not set out to question if humour was necessary for laughter), people often laugh at times when there is no humorous stimulus apparent. The level of humour in pre-laugh comments (or lack of) was independently rated. The study holds great ecological validity, as it was implemented by sending students out across a wide variety of settings to gather the data. Apart from such laughter possibly signifying a desire to appear to be fun to the interlocutor, the discord which I propose may exist in these scenarios may be as subtle as a desire to mark an effort to change topic at a particular juncture of conversation and goal-oriented laughter may well be the ideal tool with which to negotiate this difficulty.

Research has shown a relationship between laughter (even solo laughter in a group setting) and topic change in conversation, both from a temporal perspective - laughter most often occurs before a topic change, and content perspective - in that they found that topic changes and laughter are correlated (Bonin et al., 2014). Whilst Bonin et al. refer to this type of laughter as a social signal, I would develop this notion further to interpret it as the individual (or group) using laughter to negotiate the subtle inherent secondary discord associated with the intricacies of discourse. These experiences of secondary discord could be as indirect as a desire to control the conversation, or a desire to ingratiate oneself to a more dominant party in the conversation. There does not need to be any humour involved and labelling it as a social signal may be underestimating the complexity.

The discovery that such laughter occurs predominantly at times of topic changes, rather than randomly in conversation is supportive of my propositions that such laughter is A: Under some volitional control (it is goal-oriented) and B: Serving a particular purpose (negotiating a secondary discord).

Such a nuanced skill is not entirely innate. Rather, I would suggest that ability to negotiate discord in discourse through the use of laughter is honed over time and that everyone has their own capacity for such a skill. A person's ILR is reflective not only of their tendency for semi-reflexive laughter, but also goal oriented laughter. This is a further point of differentiation from the concept of sense of humour.

Instead of seeking what the essence of 'funny' is, the ILR concept suggests an exploration of why an experience of discord in a particular context was excessively

disruptive, so as to preclude laughter, or insufficiently disruptive, so as to make laughter superfluous as a discord management behaviour for a particular individual.

The idea of excessively and insufficiently disruptive discord may give the impression that there is a category in between, in which laughter is guaranteed. However, I approach the ILR from a dimensional perspective, with increasing and decreasing degrees of discord interacting with environmental, situational and intrapersonal factors, all components in the contextual laughter configuration matrix. This combination of contextual factors leads to increased or decreased potential for laughter. I term this the zone of *potential* laughter activation. This conceptual 'zone' represents a range of events and experiences which provide the ingredients for the potential for laughter, but which are still subjected to contextual filtering.

The occurrence of a laughter behaviour is also idiosyncratically influenced by interpretations of when is an appropriate and/or useful time for laughter. Such interpretations are a function of a lifelong experiences, in which an individual will have witnessed the laughter behaviour of others across multiple settings, in addition to experiencing the responses of others to her own laughter. Factors which aid in this process are explored in **Section 6.3** and further in section **7.2.1. Learning to Self-Soothe**. Idiosyncratic ILRs are also reflective of how responsive the individual is to experiences of discord (see chapter 5).

The notion of the ILR is not to be taken as a fixed state. The reaction which one has to the social environment is not static (see **section 6.3**). How one interacts with the environment changes over time as new learning occurs. Indeed, the very notion that one's behaviour and affect can be changed by examining and adjusting beliefs is a central principle of cognitive therapies (Keefe, Webb, & DeRubeis, 2016).

While an individual's propensity for laughter may be somewhat stable, it can be inhibited or disinhibited, by changing circumstances, including such factors as the pressure of social expectations and pressures, see section **6.4 Social Factors**. Consequently, the inclination to laugh is likely to exist within the guiding structure of socially normative laughter parameters (see section **6.4.1. Social Parameters**).

Laughter which occurs outside of socially normative parameters, is often considered to be aberrant. Consequently, laughter can be conceptualised as being an explicitly and implicitly monitored and controlled behaviour. In summary, whilst laughter is kept in check through the interaction of an individual's propensity for laughter interacting with social parameters, there is always room for deviation from the norm.

In the following sections I will explore the configuring properties of the ILR in more detail by considering the zone of potential laughter activation and the experiences which bracket that zone by being either too disruptive to the individual, or not being disruptive enough to warrant laughter. Finally, I will explore how the extent to which one is responsive to environmental and social factors will impact upon the rigidity or flexibility of an ILR.

6.2.1. Excessively Disruptive Experiences

If an experience of discord is too challenging it may be understood by the individual as being threatening, whether this is a challenge to his belief system, or his immediate safety and/or security. Consequently, such discord can be thought of as exceeding an ILR and he is unlikely to laugh. An alternative, and perhaps more appropriate response, which tallies with that individual's personality and temperament, emotional state, and motivational needs at that time, including a level of adherence to their belief systems, will occur.

For example, an individual may be shocked or frightened by an event which was discordant with expectations, whilst another individual may laugh, seemingly uncontrollably, at the same event. This does not imply that one response is incorrect. Rather, the point is that each response is contextually appropriate to the individual. In the example below, a child was hurt and upset by a minor accident which did not lead to laughter on his part as it was excessively disruptive for him. He may even have been experiencing some ongoing pain.

His mother however had a different experience of the same event and for her it was a laughing matter, as it fell within her zone of potential laughter activation only *when she understood the context*. Once she surmised that her son was not seriously injured, her son's safety - the main configuring factor which had been preventing laughter, was free to be set aside and her laughter was disinhibited:

> As he was telling me what happened, I tried everything to stifle myself, then suddenly it happened, the first slightest giggle escaped. I fought so hard to control it that my face hurt…Oh what a terrible mom I am!!! I guess it was a combination of things that made me laugh that day. Once I knew that he wasn't badly hurt. (Anon forum contributor – Google alerts)

The above quote also indicates that the mother was judgemental of her own laughter behaviour after the event, as she knew it was not a laughing matter for her son. She continued to state: "I think his ego hurt more than the scrapes he incurred. I of course apologised for days". While there was no follow up to this second quote, it is possible that her self-judgement altered her ILR going forward, in that she accepted how hurtful

her laughter was to her child. Consideration of the feelings of others is but one configuring social factor which is explored in section **6.4**, including considering laughter in terms of appropriateness in contexts where people are displaying fear or pain.

Returning to the matter of excessive discord, physical pain is not likely to be a laughing matter for many, if not most people who are the ones experiencing the pain, although as the situation develops and the extent of the pain and injury becomes clearer, then laughter can become an option. I had experience of this when I crashed a bike, broke a shoulder and initially could not speak, let alone laugh as a consequence of the shock from the injury. The experience far exceeded the parameters of my ILR.

However, once I discovered I could stand and walk, I began to laugh and make jokes about the crash. My zone of potential laughter activation was exceeded initially as I considered the possible consequences, but in time, the revised seriousness of the experience fell back within that zone and laughter became available to me as a means to shift my state (and just as importantly, the state of those with me) from fear to calmness. Whilst it happened over a quick time frame in this case, the emotional distance from the event (I was now more concerned with getting to the hospital) was a factor in allowing me to laugh at the experience. Had I been very upset, I might not have been laughing. Emotional distance is discussed in chapter 7.

Another person with a different emotional reaction to the accident, a different experience of pain, a different social imperative (mine was to pretend to those with me that all was OK) and ultimately, a different ILR may not have laughed about such an experience so soon and potentially may have never laughed at it, or at least may have postponed laughing until their emotional distance from the event was greater, so as to allow the experience to fall within their zone of potential laughter activation.

Strongly held beliefs can also lead to particular discordant events exceeding the upper parameters of an ILR. One individual may become angered at what he interprets as being an insulting joke and enter into an argumentative rebuttal, whilst another may laugh heartily in response to the same joke, as it doesn't present an affront to her beliefs.

During my research I observed differing reactions to a video I presented (which is acted, but is very believable as real) in which a daytime TV host laughs repeatedly and apparently uncontrollably at a male guest who had surgery which damaged his vocal chords and led to a high pitched voice (andymerv, 2008). Most of those whom I observed watching the video laughed a great deal, but one found it to be shocking and when I explained that a number of others had laughed at it, she stated:

> I can't understand why or how anyone would find that funny. It's so horrible to laugh at that man (Amelia)

Clearly Amelia found the content of the video to be excessively disruptive and her variation from the typical reaction was a powerful example that each person has a different experience of what is excessive to them.

In summary, what level of discord is so excessively disruptive so as to make an experience unlaughable, is an entirely idiosyncratic measure. However, this tipping point between what is laughable and what is not is subject to constant configuration in response to external factors. This flexibility is beneficial, as it allows one to react in a contextually appropriate manner to experiences of discord as they arise – a point which is explored more detail later.

6.2.2. Insufficiently Disruptive Experiences

In contrast to excessively disruptive experiences are insufficiently disruptive experiences. If the discordance is experienced as diminutive by the individual, if it is not understood as discordant (e.g. not getting the joke), or if it has been habituated to, then it falls below the parameters which provide a level of disruption which might benefit from any immediate processing through laughter. Just as one does not cry over spilt milk, one is unlikely to laugh in response to a broken pencil nib. Indeed, one may not even bother to sharpen the pencil, but reach into a pencil case and retrieve a replacement, such is the level of mundanity.

Minor points of discord can either be ignored, or dealt with through alternative problem-solving actions, other than laughter, just as in the example offered earlier in this chapter of fly swatting which did not lead to laughter. In terms of humour, insufficiently disruptive experiences of discord are typically not interpreted as being 'funny', as they fall below the individual's zone of potential laughter activation. Laughter without a cause for laughter would bring no benefits, would be an irrelevant action and may can be interpreted as odd - a point which is discussed in more detail in section **6.4 Social Factors**.

If an experience of discordance is too slight, there is insufficient stimulation achieved to reach the lower activation levels of the ILR, as a commentator explained in a review of laughter yoga:

> I'm an easy laugh, but not too easy, and generally I require more than just the cascading glissando of other people's giggle [to instigate laughter]. I prefer the waa-waa-waa reaction of a deeply dirty joke (Online reviewer – Google alerts)

Consequently, a more discreet behaviour is likely to be situationally appropriate, such as a smile in response to a humorous anecdote, or perhaps, on an even more commonplace but implicit level – perceiving and reacting in an unconscious, but not necessarily palpable manner to a trivially disruptive experience. This type of implicit

response is evident in experimental paradigms which use masked priming to manipulate emotions for instance (Scott, Mogg, & Bradley, 2001; Wentura, Rohr, & Degner, 2017).

Whilst it was beyond the scope of the current study to ascertain the precise level of reactivity of particular individuals, some people are prone to laugh more readily than others, as this snippet from a conversation about uncontrollable laughter indicates:

> I treat people with respect and don't laugh on purpose, but I can't help it most of the time. I find humour in mostly everything and if I try to control it, it comes out even louder. (Anon contributor – Yahoo answers)

It follows therefore that the opposite can also be true – some people can be less reactive. In support of this notion, previous research shows that there are individual differences which are relevant to emotional reactivity (and I propose to laughter, by extension), from attentional biases to threat-relevant stimuli (Peckham, McHugh, & Otto, 2010), but also specifically to levels of reactivity to the laughter of others (Ruch, Hofmann, & Platt, 2015). I propose that similar individual differences would apply with regards to potential laughter activators and that some people would simply require more stimulation than others before they might even have the inclination to laugh in a semi-reflexive manner.

Noticing that which one doesn't attend to in terms of obvious behavioural reactions is somewhat of a challenge. However, in the search for data for this purpose, I actively took time to record some 'non-events'. Some examples of non-laughter inducing experiences of discord which I experienced are:

1) **Spilling some water**

(Behavioural reaction: Paused briefly, but kept walking)

2) **Slipping on damp decking**

(Behavioural reaction: I unconsciously steadied myself)

Given that there are a multitude of experiences which may have potential, but fail to stimulate laughter, it would be unproductive to continue to list them. However, it is worth

mentioning that not all insufficiently disruptive experiences fail to induce laughter because they are not attended to. Individuals may be well aware that they are expected to laugh at a stimulus, but don't find the urge to. Failed humour is salient in this regard, as it reflects an explicit social activity gone awry, rather than a chance event which goes unnoticed.

In a discussion of poor jokes, an interview participant shared the following recollections:

> I remember there was a friend of ours as teenagers who used to try everything to get people to laugh – corny jokes, gags about everything. Sometimes it worked, but he generally wasn't funny. It was a bit embarrassing. In fact, the biggest laugh I remember him getting was at his expense when he tried to be funny again and nobody laughed until one of my mates said to him "That was so incredibly unfunny". I still laugh now, thinking back to it. (Graham – Interview participant)

Just as some attempts at humour, such as sexist jokes, may fall flat because they are excessively disruptive to some, the opposite can also be the case in terms of insufficiently disruptive laughter provocation attempts (as shown above). This failure can occur not only because of a poor execution or poor joke content, but also because an individual (the audience) may quite simply not understand the intention of the joke. Indeed, as Dunbar, Launay and Curry (2015) showed in their study of joke complexity, individuals have cognitive limits which inhibit their ability to understand jokes beyond a certain level of convolution.

If an attempt at humour makes no sense to the person at whom it was aimed, then it simply won't stimulate them sufficiently to warrant a reaction such as laughter. The same argument could potentially be applied to excessive disruption however, in that a concept may be too complex and may be confusing to a distressing level which exceeds laughter parameters. Whether the experience is excessive or insufficient will depend upon the individual.

In summary, an individual can experience discord which is so unobtrusive as to be insufficient for instigating laughter. The reasons for the lack of disruption are broad and can include a lack of understanding, lack of attention to the experience, or there may be situational factors at play, such as distraction, or habituation to a repeated experience.

The topics of excessively and insufficiently disruptive experience of discord are intertwined throughout the remainder of this theory and further evidence for the concepts will arise as the theory progresses. However, before examining the next major topic - the development and adjustment of the skill of negotiating discord with laughter - attention is drawn to the conceptual space between excessively and insufficiently disruptive discord, the zone of potential laughter activation.

6.2.3. Zone of potential laughter activation

If an experience is neither insufficiently disruptive, nor excessively disruptive, then it falls in the *zone of potential laughter activation* - the conceptual psychological 'zone' within which there is increased opportunity for laughter, relative to the less likely (but not impossible) occurrence of laughter outside of the individual's typical laughter range. While the conditions for negotiating discord through laughter are more suitable in this zone and laughter is more likely as a consequence, it is still not guaranteed. When laughter fails to materialise in this zone, despite the experience of discord providing a tolerable experience of disruption (i.e. it is above the lower threshold and is not excessively disruptive) and hence being a suitable candidate for negotiation through laughter, I propose that laughter is being inhibited.

Laughter inhibition occurs in everyday life and is a part of behaving in accordance with social norms, as the following comment from a discussion about 'inappropriate' laughter indicates:

> Everybody else was laughing on the inside. They just pretended to act all mature and fancy (Anon contributor – Redditt)

With this in mind, I will begin this discussion by exploring why, if an experience of discord falls within this zone, it is not a guarantee that laughter will occur. I will then explore the related topics of humour and comedy and how they interact within the zone of potential for laughter activation. I will then introduce the concept of social laughter parameters and explore how experiences of discord which might typically be too disruptive for laughter can be enveloped by a temporarily altered level of laughter (dis)inhibition, which is responsive to social context.

As mentioned earlier, there is no guarantee that if an experience of discord falls within the zone of potential for laughter, that the individual will laugh. If this were not the case, people would be laughing at every tolerable experience of discord which confronted them. The reason for a dearth of consistent laughter in response to every point of discord throughout the day may simply be because the individual has a repertoire of alternative means with which to negotiate experiences of discord and laughter is proactively

withheld in order to allow another more context relevant behaviour to come to the fore and negotiate the disruption. An example would be expressing concern to another, rather than laughing in response to a troubling worry of theirs. The comment below arose in response to a question which was posed – Do you ever find yourself holding laughter in?

> I had this experience only recently [withholding laughter], when a friend was worried about a colonoscopy that he was due to have. Although in my head I came up with what I thought was a hilarious joke – 'that must be a pain in the arse' and I really felt the laughter bubbling away, I just about managed to hold it back and decided it would be best to nod, look concerned and ask again 'when is that due to happen?' I genuinely believe that laughing about it might have been better for him, because he looked really stressed, but the fact that his wife was there too, I said I'd better not. Now if she hadn't, I reckon we'd have spent the next five minutes laughing about it. (Damien – Interview participant)

Inhibition of laughter can occur also occur in response to contextual factors which explicitly demand that laughter is not acceptable. This might occur if a power holder, or 'laughter gatekeeper' as I term them, dictates that laughter is not permitted under certain circumstances, such as in a classroom for instance:

> It's about the class dynamic. Someone might be a class clown. That [getting laughs] might be their talent, but at some point, you have to say 'that's enough'. There's a line. You can't have someone messing all day long. Especially if they're undermining the teacher's position. (Noel – School Teacher – Participant Interview)

The inhibition of laughter can also occur implicitly. For instance, as the quote below from a discussion of inappropriate laughter indicates, the social schema of a church as a place of solemnity suggests that laughter is not appropriate – "You know you can't laugh at the church unless the priest says something funny." (Anon contributor – Google alerts). Laughter gatekeepers in roles such as that of priest in a sermon, have the authority to allow laughter, but only under predetermined criteria, which they authorise. Unauthorised laughter is socially unacceptable and therefore typically inhibited.

There are however, plenty of occasions when people cannot resist laughing under such circumstances, typically to the disappointment of others in the social setting, as the experience below outlined in a discussion of 'most inappropriate time to laugh':

> I was at my great-grandmother's funeral. As they were lowering her coffin into the grave, the pastor (this big, goofy-looking man) stumbles over a rock on the ground and almost falls into the grave. He caught himself on the coffin and had to swing himself back upright. My aunt and I looked at each other and burst out laughing. Some distant relatives gave judgemental looks. (Anon Contributor - Reddit)

'Judgmental looks' are not without consequence and are likely to have an influence upon future laughter behaviours. It could be argued that a person who, through experience, learns to recognise such contextual configuring factors and consciously takes them into account by supressing laughter the next time they feel it coming on, is displaying social intelligence (Goleman, 2007) by actively inhibiting the behaviour. However, the contextual laughter configuration matrix may also operate implicitly upon an individual's laughter potential, which can be supressed by many factors including the emotional state of other people in their company. For instance, when a person who might typically laugh, doesn't laugh while their friend appears to be upset could be said to be displaying a level of emotional intelligence (Goleman, 2004), even if he is unlikely to be aware that he has proactively inhibited laughter.

To explain this notion of inhibition further, it is useful to incorporate extant literature which tackles the subject from a different, but parallel perspective. Previous neurological research shows that there are two types of behavioural inhibition. Proactive inhibition and reactive inhibition (Aron, 2011). Reactive inhibition refers to the cessation or cutting short of a response which has already commenced. In terms of laughter, this may present as ceasing laughter which has already begun.

Proactive inhibition is when one prepares to withhold or prevent a potential response. In terms of laughter, this would play out as implicitly preventing laughter before it starts. While the area of reactive inhibition is an advanced field of research, the field of neurology has been showing increased interest in the area of proactive inhibition, but is relatively less progressed (Meyer & Bucci, 2016). An interesting pattern which has emerged within this limited field however, is that

> Reactive and proactive inhibition function in a complementary manner to permit efficient and flexible control of behavior in response to details of the surrounding environment (Meyer & Bucci, 2016, p. 510).

These findings map well on to the notion of laughter being inhibited explicitly and implicitly tempered in response to contextual configuring factors, despite the potential for laughter being available.

While it is important to introduce the notion above as to why one might not laugh, despite an experience falling within a conceptual 'zone' which offers enhanced opportunity for laughter, what of occasions when one does laugh?

While laughter is commonly connected with humour, as was mentioned earlier, it can and does occur in the absence of humour. Indeed, even such non humorous occurrences as discrepancy in imagined weight and a highly discordant weight of an object can lead to laughter (Deckers, 1993; Nerhardt, 1975). In Nerhardt's original study, participants had to estimate the weight of a series of items. The weight of the final item they were presented with was unexpectedly significantly different to the weight of the previous items. This discordance in weight expectations versus reality of the weight led to laughter in most participants, in the absence of a formal attempt at humour. This was an entirely unexpected outcome and not the purpose of the study, but it ingeniously became a template for how to instigate laughter in the absence of humour.

This experiment is a vivid portrayal of laughter operating as I propose – as a tolerable discord management tool. Alterations to this experiment which might have made the weight difference slightly less significant or added a highly disruptive element, would likely have led to a different response, devoid of laughter, but I could not find evidence of such alterations being made to this or similar studies. It would be particularly interesting to explore exactly what level of discrepancy in weight is the cutting point for instigating laughter.

Whilst laughter can occur in the absence of humour, one might reasonably expect that a discussion of a zone within which laughter is likely to occur, would include a discussion of humour. This is indeed the case, however, whilst humour is discussed in this theory, it is within the confines of the extent to which it has emerged as being relevant data. The

present study is not a theory of humour and does not offer an explanation as to what are the ingredients which make something subjectively funny. Rather, this theory examines the circumstances under which one tends to emit laughter and to what consequence. The potential factors which make the opportunity for laughter available have already been introduced in chapters 5, in terms of the negotiation of experiences of tolerable levels of discord.

Humour is one important psychological phenomenon which introduces experiences of discord and the same processes as with other experiences of primary discord apply here. However, what is humorous and what makes one laugh can be different things, if the reaction of other people is used as a guide. What made the person laugh in the following quote from a discussion of inappropriate laughter was clearly not humorous to those around him:

> Went to see a thriller, at the cinema. I fell asleep. At the most tense, quiet part of the movie, I farted super loudly. Woken by my own fart, I proceeded to laugh loudly and uncontrollably, for a long time. No one was amused. (Anon contributor – Reddit)

One area of overlap with humour and laughter which is of particular interest to the current theory, is when humour takes the form of being a formalised approach to unlocking the potential for a laughter response. Such humour is essentially a conscious manipulation of the human tendency to laugh in response to experiences of primary discord which are sufficiently disruptive. This is not always the case, in that a response of laughter, while it may be desirable, is not always required or expected, as a respondent in Friedman's (2011) study of the cultural role of comedy portrayed:

> I don't think laughter is integral. It's really irrelevant for me personally. I suppose you're taking in the artistic value rather than just purely making you laugh. (Steve) (Friedman, 2011, p. 361)

Uncontroversial comedians such as Michael McIntyre, who has been described by 'comedy snobs' and comedians alike (Friedman, 2014), as being too safe, or not edgy enough, are typically appealing to a general audience. McIntyre and comedians who share a similar comedic style, are experts at writing and/or presenting material which stimulate emotions sufficiently to fall within the zone of enhanced potential laughter

activation for large numbers of people, without having to test and thereby risk exceeding the upper limits of the audience's laughter range.

Other, more 'edgy comedians'' material may be excessively disruptive for many, whilst falling within the zone of potential activation primarily of those who have a broader individual laughter range. This is not necessarily an accident, as comedians, like any performers, can aim their artistic expressions at a particular audience and their preferred target audience may not be the soft, or safe option. Comedians, like any service provider, recognise that audiences (their customers) have the option to choose which comedians they seek out, based upon their comedic style and associated reputation.

When comedians speak of 'pushing the boundaries', or 'walking the line', the line which they are speaking of is analogous to the upper limits of their audience's laughter range. Conversely, some comedians (for example Jack. D) may test the lower limits of the audience's range, by presenting low key humour, which leads to laughter in only some of the audience, thereby enhancing the tension through an air of expectation, or perhaps through an experience of social awkwardness. While it is a matter of taste as to what constitutes a good comedian, it could certainly be proposed that a skilled comedian is one who can read the behaviours and reactions of each audience and adjust their testing of the limits of the audience's social laughter parameters in accordance with their own comedic goals in that particular performance.

Audience behaviour does differ, as attested to by two professionals working in the field who participated in the current study, one of whom is quoted below. Crowds can differ hugely, even when the same material is presented night after night:

> You can feel emotion. Something like laughter...when I walk into a room in a gig, I can tell how the night's going to be, if they're gonna be rowdy and it's not about noise, it's about a shared feeling. Like when a riot happens, people afterwards are literally shocked that they got involved. This emotion is all around them and it's almost contagious…(Sam – Comedian Interview participant)

A skilled comedian can also ‘work the crowd’, in that they can manipulate the audience’s *social laughter parameters*. Sam described this skill succinctly – “I know how to bring it up and bring it down”.

The term *social laughter parameters* reflects a conflation of the multiple individual laughter ranges which are reacting and interacting not only with the comedian, but also with those who surround them in the audience. The comedian provides disruptive material and the audience signals the boundaries of their social laughter parameters through their reaction(s). This is a transactional experience as not only is the comedian receiving feedback through laughter (or lack of), but so too are the audience members, as they adjust their laughter in accordance with the consensus in the room. When comedians speak of ‘reading the room’, it is this process which they are referring to. For the comedian, it is an aspect of their job, for the audience it is an implicit process.

This is a temporary and contextually specific consequence of social situations which is perhaps most evident in comedy venues, but which I propose exists in all social contexts to varying degrees. This concept is expanded upon in section 6**.4.1 Social laughter parameters**. These parameters reflect the social context’s influence upon each individual’s laughter inhibitions and disinhibitions and the point at which a sufficient number of them are altered enough to promote a collective laughter experience.

Unlike the aforementioned Michael McIntyre, whose jokes inhabit the safe zone of potential for laughter, and therefore offer enhanced opportunity, some comedians may make a conscious decision to test the upper margins of the social parameters, or indeed, far exceed them. Despite the fact that some comedy is excessively disruptive for particular individuals, when considered in terms of their ILR, they may still find themselves laughing at that which is normally shocking or disturbing, or typically unacceptable to them.

Such a situation, and how an element of what I term ‘social permission giving’ serves to make the disinhibition of laughter possible in this regard is illustrated by Sam, who describes how he pushes the boundaries with a particular gag involving disability:

> I tell a story of how a guy in a wheelchair with a cowboy hat went past the front of the stage once and I went ‘Whoa! Broke back Mountain.’ 15-20% of the audience will laugh hysterically straight away [*the gag falls within their laughter range*]. There will be kind of a muttering from the others, where people are thinking. But then, when I say, 'He laughed so hard, he crashed.' There's a huge explosion of laughter, because everyone realises that it's ok to laugh at that. (Sam)

In his book Ha! The science of when we laugh and why, Weems (2014) describes an event at which the comedian Gilbert Gottfried shocked an audience a few short weeks after the 9/11 attacks by telling a joke themed around taking a flight diversion out of New York via the Empire State building. In the parlance of the current theory, the discord which Gottfried had sewn far exceeded the laughter parameters of the audience, not only on a social level, but given that nobody laughed, also on an individual level.

In order to verify Weem’s assertions, I tracked down a TV interview with Gottfried, which referenced that night. According to Gottfried himself, people hissed and shouted ‘too soon’ (Meyers, 2017). However, when the audience reacted with shock and an absence of laughter, Gottfried did not relent. Rather, he continued to challenge the boundaries by telling what Weems describes as “the dirtiest joke in the world” – known as ‘The Aristocrats’, a long standing and heavily improvised joke which involves versions of “scatology, violence and even incest” (Weems, 2014, p. 6), but always the same punchline.

By recognising that the audience’s laughter parameters had been excessively disrupted and proceeding to present yet another shocking joke, Gottfried took a chance, not by backing off completely and entering a comedic retreat, but by introducing a joke with a level of disruption that might have been of a slightly lesser degree than joking about the traumatic 9/11 attacks, but which was still extremely shocking. In doing so, Gottfried was still seeking out the upper limits while simultaneously taking advantage of the tension. Such tension is a crucial factor in enhancing levels of laughter:

> Well, the school classroom theory of humour - when you are in school and someone farted or a stomach rumbles and everyone laughs because of the tension that's in the classroom. The tension is unnatural. Very serious. So, when something happens everyone

> laughs, because it's broken the tension. In comedy you aim to get that same kind of atmosphere. That tension in a room. The explosion of laughter when you do hit your punch line can be multiplied by millions. (Sam)

Had Gottfried retreated to a much lower level of disruption his joke might have worked, but he would likely have been remembered primarily as the comedian who made the poorly timed 9/11 joke. Had he exceeded the social parameters a second time, he equally may have been remembered badly. However, he had already set a ceiling by joking about the terrorist attacks. Being a comedian, he would have been exposed to versions of the legendary 'The Aristocrats' on multiple occasions, so he knew it could work, given the right setting.

According to Weems, Gottfried proceeded to 'kill the rest of his performance' and the events of that night are now infamous (Weems, 2014). In the TV interview referenced above, Gottfried explained how "It showed that in situations like that, people need to laugh. They really want to laugh" (Meyers, 2017). What Gottfried did that night was shift the laughter inhibited state of the audience from one of anger and disgust to a state in which they could disinhibit their laughter. From what Gottfried suggested, it may be that the audience were active and willing participants in that shift.

The temporary adjustment of levels of inhibition does not necessarily require the conscious interventions of another, as situational factors, such as the décor of the room may even play a part – a point which is discussed in more detail in section 6**.5 Situational Expectations**.

While the discussion of the ILR thus far has been predominantly focused upon semi-reflexive laughter, goal-oriented laughter cannot simply be ignored. It is also possible that despite a stimulus being either excessively, or insufficiently disruptive and thereby falling outside of the upper or lower laughter parameters of an individual's potential laughter activation zone, an individual can still choose to feign laughter in such situations. In doing this they can use their goal-oriented laughter as a means to provide a desired impression or alter the behaviour of others.

The example below shows feigned laughter in action, being used to negotiate embarrassment and social cohesion in the one interaction. Antoinette could not understand the accent of the cashier in a supermarket and this led to confusion which is apparent in the passage:

> She continued to laugh and she was talking and I was feigning a laugh and she looked up at me waiting for an answer at this point and I continued to smile and laugh. It went on for five minutes and I was saying things like 'Indeed' as I laughed. I hadn't a clue. I was really embarrassed because I had an audience [at the shopping till queue] and I didn't want them to know I didn't understand her [the cashier]. So, I didn't want to offend her, I didn't want to look like a dick in front of all the others. All of that was going on and I was trying to think of neutral answers as I laughed, to keep it going. We were best friends then. She said, 'Oh here, I'll give you another bag' as clear as you like...none of the rest of it was clear...we were obviously best mates. (Antoinette – Interview participant)

The strategic use of feigned laughter is a pervasive property of the behaviour of laughter and it has implications for the understanding of the laughter behaviour, not only in terms of the findings of research data, but also in terms of typical social interactions, as people go about their daily lives, making implicit and explicit interpretations of the meaning of laughter. Such an ability to feign laughter at will affords a level of power, or agency to an individual as to when they choose to laugh or inhibit laughter. This concept of agency attached to laughter suggests that there is an element of flexibility with regards to how and when laughter is implemented. The following section explores that notion.

6.2.4. Flexibility versus Rigidity

The final point to note in relation to the ILR is that the very nature of laughter is to negotiate the unexpected. As mentioned above, the parameters of the individual laughter range are not entirely rigid constructs. This flexibility makes sense, both from the perspective of the observable behaviour of the randomness of laughter offering clues as to the nature of its flexibility and also when considering laughter's potential for emotional recalibration (explored in chapter 7), which tallies with the situational needs of the individual when laughter functions optimally.

Semi-reflexive laughter tends to occur in response to the unexpected and by its very nature, the unexpected does not offer predictable levels of stimulation. Likewise, goal-oriented laughter operates as a means to negotiate a situation which is presenting some challenge. Hence, the observable behaviour of laughter is an indication of an irregular state of flux. That which processes fluctuations must too be capable of responsive change, otherwise, it is destined to quickly become defunct. Prior to moving on to an exploration of how laughter develops over the lifespan in section **6.3 Lifespan Development and Learning**, I will explore how transient factors interact with the rigidity or flexibility of an individual's laughter range.

As an example of an adjustment of a laughter tendency which is somewhat counterintuitive on first consideration, in an incidental conversation with me, a father suggested that his daughter tended to laugh more during school holidays, when she was under stimulated. He described her as 'getting giddy and driving her mother crazy.' He spoke about how, in the absence of schoolwork she had far fewer activities to keep her busy than during school term. As a consequence, he felt that she was prone to laugh at the most mundane of experiences. This typically played out as wriggling and giggling while getting her hair brushed or being dressed by her mother. Rather than take this as evidence that putting a t-shirt on can be funny, I propose that this little girl's lower range for laughter was temporarily altered as a consequence of the under stimulating environment, in which even the slightest action could stand out to her as being a cause for laughter.

In other words, in a busy school environment she is bombarded with stimulation and such an innocuous event as having her hair brushed is a just another step in the rushed process of getting ready for school. There simply isn't time to attend to such matters. During summer holidays, this could become a stand out event and an opportunity to wind her mother up with mildly challenging behaviour and laughing at the strained reactions as a means to negotiate the latent stress. Having a flexible laughter range is beneficial in this regard as it allows one to adapt to the environmental circumstances. What is stressful in today's environment may be an insignificant blip in a different context.

With regards to humour, the examples given in the previous section of individual parameters first being exceeded, but social parameters and 'permission giving' altering the zone within one may laugh, rigidity would pose challenges. Most obviously, one's own enjoyment of a comedy event would certainly be constrained if one could not adapt one's zone for laughter potential to mirror that of the predominant social setting. To explore this concept, I asked Sam if organisational cultures exist with regards to laughter and if people look to each other for 'permission to laugh', to which he responded:

> I think it's about how they should be behaving. If it's a company, everyone works together. There's people looking towards the boss. If I'm part of Mr Johnson's team and the comedian comes along and he's like me, walking along the line. I look over at Mr Johnson and Mr Johnson's not laughing - I'm sure as hell not going to laugh, because Mr Johnson's my boss and I'm not going to look like a fool. Mr Johnson may well be looking at the CEO and if he starts to laugh, then it trickles down the line. It's social. (Sam)

On the other hand, if one failed to laugh whilst others in the group laugh, one may be seen by the others as an outlier and not laughing along could influence social interactions going forward. Indeed, Reysen (2006) discovered that laughter (even what he termed fake laughter) enhanced likeability ratings. Reysen's study used video recordings and stills of people laughing, which may not be as true to reality as face to face laughter, as it is missing some of the contextual element of the behaviour. However, in both scenarios, those who laughed were rated as more likeable.

To be broadly beneficial, a system which makes use of an emotionally grounded tool such as laughter, must be capable of some adaptation in response to learning experiences which impact upon emotional reactivity. However, in the long-term, this

adaptation can be subtle and may be topic or experience specific. I am not proposing that a person who learns, for instance, that they can use laughter to diffuse some of the emotional pain of traumatic events from their childhood, will have abruptly begun to think that all childhood bullying is a laughing matter.

However, rigidity would mean that an individual would never learn that they might, in time, 'laugh in the face' of that which may seem to be an insurmountable adversity today, or that they could intentionally use laughter to soften troubling experiences. To the contrary, during the data collection process of this thesis, it transpired that people recognise the state shifting properties of laughter and make a conscious decision to implement laughter as a strategy to contest their challenging circumstances:

> Searching for ways to cope, I found that laughter was the best strategy…Find ways to laugh. Dementia sucks. It's ugly and hard and sad, but laughter brings a soft edge to the devastating disease. (Caregiver – Google alerts)

When an individual laughs at a particular event which had previously been excessively disruptive for them, I do not propose that their laughter parameters have expanded to a degree which now incorporates *all* such events. Rather, I propose that such a change is incremental and that while laughter is not typically a life changing behaviour, it can certainly contribute to wider psychological change over time. This notion becomes more apparent in chapter 7.

In essence, rather than laughter, or indeed changes to an ILR being the sole factors which lead to wider psychological change over time, I propose that such changes are reflective of a process of wider transformation. Apart from incremental changes to one's laughter range, emotional and temporal distance from an event, coupled with cognitive processing and/or reframing of the event, can lead to aspects of the discordance falling within the *z*one of potential laughter activation. The folk saying of 'time is a great healer' seems pertinent in this regard. A suitable addendum to the saying might be that it is often laughter which finishes the job:

> It doesn't take much effort to recall that hot flush to my face following certain embarrassments, plus that feeling of wishing I was anywhere else in the world, even in a stampede of wildebeests, rather than in the midst of heckling kids. But that's part of growing up. Now, many of those memories provide a good chuckle, which is really important when I start taking myself too seriously. (Anon blogger – Google alerts).

The phenomenon of 'spontaneous remission', an occurrence of unaccounted for change by which the condition of individuals who have received no treatment in experimental paradigms alters (Kazdin, 2010), reflects the general concept of time as healer. It is also possible therefore that apparent changes in an ILR can reflect broader scale changes in one, or many factors, ranging from religious affiliation to changes in the individual's general concept of the world and of the self – changes which thereby alter the lens through which discordances are implicitly and explicitly considered in a more general sense.

In summary, the concept of individual laughter range and the conceptual space in between the parameters for insufficient and excessive disruption – the zone of potential laughter activation, is one which represents a person's general ability, and to some extent - his desire, to process a disruptive event by responding to it with laughter. Such ability and desire are reflective not of a rigid state, but of the individual's broader psychological position over time.

The ILR, being a component in a greater psychophysiological system for processing discordances, moves in tandem with wider psychological change which might occur spontaneously or volitionally over a period. Operating alongside this process is temporal and emotional distance from individual events, which allows these events to be processed by laughter, once the emotional charge associated with them has diminished sufficiently.

6.3. Life Span Development and Learning

As mentioned in chapter 1, laughter is an innate and universal prelinguistic behaviour, which emerges in humans between the ages of two to six months, even amongst infants who are congenitally deaf and blind (Gervais & Wilson, 2005; Scheiner, Hammerschmidt, Jürgens, & Zwirner, 2002).

Neurological evidence unearthed during presurgical stimulation of the frontal lobes of a seizures patient, which caused intense hearty laughter, suggests that there is a built in 'response integration system for laughter' (Panksepp & Burgdorf, 2003, p. 543). However, despite the apparent existence of a 'laughter module', if the behaviour of laughter is not reinforced through temporally associated contextual attention, laughter can fade in these infants (Gervais & Wilson, 2005). In terms of this theory, this aspect is an early marker for how the behaviour of laughter develops adaptively in response to the environment. Without environmental feedback, this innate behaviour becomes defunct. For typically developing children, laughter remains as an integral part of their behavioural repertoire, right through the lifespan. Indeed, as Panksepp and Burgdorf (2003) proposed:

> This system is evolutionarily prepared to respond to certain environmental events, such as tickle and friendly surprising stimuli, so as to facilitate social interactions and to take them in positive directions in ways that promote bonding and cooperative activities. If one tries to envision such processes in dynamic terms, one might imagine laughter and mirth to be global attractor processes that captivate widely reverberating ensembles of neural networks within the brain of one individual that can spread infectiously among interacting individuals. (Panksepp & Burgdorf, 2003, p. 543)

Whilst this statement is an appealing one, Panksepp and Burgdof's assertions are informed by their investigative work with rats. They discovered that rats emit a 'laughter like' chirping sound during rough and tumble play. It was noticed that play dropped off as chirping decreased. This was similarly shown to occur with human children, whose play dropped off as laughter decreased (Scott & Panksepp, 2003). I don't believe that the direction of the correlation is that laughter fades because the play fades. Rather, I believe it is the opposite.

I would propose that laughter (and perhaps rat chirping) is not entirely indicative of fun, but may even be the opposite to some degree. I suggest that the laugher is negotiating the challenges of the rough and tumble play. It is helping the play partners to cope with the faux fight. It is not a social signal, but a discord management mechanism.

As the play becomes too tiring, or perhaps too boisterous, laughter is no longer suitable or capable of supporting the discord and play drops off. Whilst I don't have data to back up my assertion, my experience as a parent tells me that when the laughter starts to fade, it's time to break it up, as the next level of discord management – crying, is not far away. Humans (and rats) who can recognise this drop off in laughter can either reduce their dominance in the play bout and get to play another day, or keep going without laughter, reign victorious, but lose a sparring partner for future bouts.

Laughter has also been found to occur and be readily recognised cross culturally (Sauter et al., 2010; Scott, 2013). The level of ability of recognition is so developed that a cross-cultural study showed that people could detect co-laughter amongst friends versus strangers with an accuracy of 53-67% (Bryant et al., 2016a). However, despite the evolutionary foundation, the means and conditions under which the behaviour of laughter is controlled and altered changes throughout the lifespan, not only in response to social and cultural factors which direct the appropriateness of the behaviour, but it also alters in response to developmental change.

In the current section, I will explore the developmental changes to laughter which have emerged throughout this study, in addition to considering how stages of life can place one in differing social contexts which also influence the behaviour of laughter. One such social setting is that of school.

Prior to introducing the implications of educational settings for the development of an individual laughter range in greater detail in section **6.4 Social Factors**, I draw attention to the following comments from a Montessori teacher who participated in the research, as she reflected upon the joys of working with children:

> Most children laugh easily, I would think, because their lives are simple enough and, you know, because they're not complex, like with an adult.

> We've all loads of other worries. Children laugh much more than adults anyway. (Bernadette – Interview Participant)

The comment above represents a typical view, supported by scientific data (Provine, 2000), which has shown that children laugh more often than adults. A question which arises and which is relevant to the formation of an ILR is *why* do children laugh much more than adults? The following comment suggests that the cause of the gap in the level of child versus adult laughter expression is the '*depressing*' behaviour of adults:

> In a workplace [other than a Montessori], it is all adults and we all drag each other down. We're all quite depressing (Bernadette).

On the face of it, the challenges of adult life versus the apparent triviality of childhood makes for a compelling explanation for an apparent decrease of laughter with age. On first consideration, this explanation appears to be supportive of the notion of a contextual laughter configuration matrix, in which the challenges of adult life lead to reduced opportunity for laughter. However, whilst adult lives are undoubtedly more complex than children's in many aspects and as such, can present serious challenges for mental well-being, the combination of adult responsibilities along with the pressures of the social world and consequential mental health pressures (when compared to those of children's) is unlikely to be the complete explanation for the higher rate of laughter amongst children. Indeed, such an explanation is lacking, in that it focuses only upon the effects of differing circumstances between adult and child lives and it fails to consider differences in developmental realities.

One developmental reason as to why children may laugh more is that children experience a great deal more minor discord in their world than adults do, as they haven't had the opportunity (due to a comparative lack of world experiences), nor have they reached a stage of cognitive development, at which they are prone to habituate to as many stimuli in the world as adults have.

In a dynamic world, children still have relatively more scope to be surprised, whereas adults, as a necessary consequence of development, have learned in a general sense

what they can expect and have habituated to many of the stimuli and experiences which they consequently either take for granted, or no longer notice. This makes adaptive sense for adults in terms of the efficient use of attentional processes and it is the phenomenon of habituation that is the subject of **section 6.3.3.**

Following this, attention will move to other aspects of development which contribute to the development of individual differences and finally there will be consideration of how certain disorders can impact upon laughter.

However, attention first turns to the fascinating experiences of an infant's first laugh (**section 6.3.1.**) after which the means by which an infant is encouraged to use laughter (**section 6.3.2.**) are explored in the context of an innate behaviour in a socially configured world.

6.3.1. The First Laugh

Despite the apparent regularity of laughter amongst children, being fortunate enough to witness the first laugh of an infant is a rare and privileged occasion. The most likely observers of an infant's first laughter therefore, are the parents.

Fortunately, as a father of three children, I have been present for three such occasions and as such, I have the benefit of experience in this regard. Whilst I can recall, with some degree of accuracy, the circumstances under which these events occurred, I did not have a notebook to hand, as I was busy on each occasion making the most of this new-found laughter, along with all in my company, as we endeavoured to make the laughter last as long as we could. This aspect of my recollection alone speaks volumes, which I will expand upon shortly.

The first laugh is not an insignificant event for parents. It feels good as a parent and one expects that it feels good for your child too. It is a moment of joyous connection, when your child's laughter causes everyone in earshot (bar the laughter provoker) to pause all activities and gather around the infant to watch the unfolding event.

As a parent, one implicitly senses the importance of this laughter and one pays great attention to what it is that is making your child laugh, so you can replicate the events at another time. From my experience, it is an unexpected, or moderately frightening experience for the infant which causes the laughter. This can range from a strange playful noise made by a grandparent as they suddenly raise the infant at arm's length into the air, to a gentle bouncing of the infant on your knee as you smile at them.

In either event, what instigates the laughter is a disruptive event. Whilst one cannot be sure of what an infant is thinking, by the time they begin laughing, one is adept at recognising surprise in his body language and an experience of surprise is evident in the first laughter event. Given that this is the earliest presentation of laughter in the developing child, one can safely surmise that he is not laughing to be polite, nor is he laughing in response to a well-timed joke. What you are witnessing at that time is laughter in its most raw state, before the infant has learned to conform to the tempering effects of the aforementioned *Contextual Laughter Configuration Matrix*.

What also becomes quickly apparent, despite the excitement of the adults is that if the discordance is too challenging, the infant can quickly tire of the laughter, as he straddles a barely discernible border between bursting into tears and bursting into another bout of laughter. This never distant presence of potential for tears is indicative of the troubling discordance which the infant is experiencing. The event is simultaneously frightening and pleasurable, as those who are interacting with the infant implicitly attempt to teach the infant that it's better to laugh than cry in such circumstances, by combining soothing sounds with their own laughter throughout the episode.

As the child develops, the basic fear response is in time replaced with alternative approaches to managing discord, including laughter - a proposition which is supported by research which presented children aged 7-11 years with animations, which elicited less fear and more laughter, the older the children were:

> Age specific and individual differences were revealed in the children's perceptions of funny and scary things in the animated film; the discovered tendency is such that fearful feelings consequently decrease with age while laughing, on the contrary, increases (Romanova, 2014)

The implication here is that the developmental and learning process for the efficient use of laughter does not cease in infancy. Rather, this process of refining the use of laughter continues throughout the lifespan and it is to the early stages of this refinement process that attention is now drawn.

6.3.2. Refining Laughter

The aforementioned refinement process is readily available for observation and study via publicly available videos on YouTube, with a large open source database of 'Baby Laughing' videos supporting my views that laughter in infants does indeed occur as a response to discord. The observable discordances which cause laughter can range from the surprise of the sound of paper being torn (BruBearBaby, 2011), to an infant's initial highly animated startle response instigated by a mother's sneeze (Mandkyeo, 2011), which transform into laughter with the reassurances of the infant's mother.

What is evident in these and each of the numerous other videos, is the presence of a caregiver, who through a combination of smiling, laughing, and/or 'motherese' speech - a form of soothing speech as described by Snow (1972) - offers reassurance to the infant when they look frightened, that there is no serious peril and hence, that laughter is an appropriate alternative to crying – an option which infants so often appear to be straddling and which they often avail of.

In cases where the infant hasn't yet refined the practice of using laughter to regulate their distress, the laughter can quickly turn to tears. Indeed, there is an alternative montage of videos in which many of the same stimuli which instigate laughter in some infants, instigates crying in these particular infants (FunnyPlus, 2015). Many of the infants featured recover composure after reassurances from the parent, which often include parental laughter. These reassurances mirror those of the parents who managed to instigate laughter in their children, yet in these 'scared' cases, infant laughter was missing.

I propose that the level of discord is excessively disruptive for the infants in question, as the temperament and stage of emotional development of the child does not (yet) allow them to negotiate discord of this degree through laughter. Indeed, for some children, their temperament or psychological makeup may never allow them to develop a typically functioning laughter-based discord management behaviour. It may also be possible that the relationship between the infant and the person presenting the discord does not offer a sufficient level of soothing to transfer a lesson to the infant that laughter is an option –

a lesson which may require mirroring of peers or other caregivers at another stage of development.

Essentially, what these contrasting sets of videos show, is the learning process in action. Each of the caregivers and each of their infants is on a path of discovery, attuning the level of disruptive stimuli presented with the infant's individual temperament, coupled with that of the caregivers and associated emotional responses to experiences of discord. Infants are highly dependent upon emotional cues from others as a means not only to learn how to predict the behaviour of others, but also to learn how to manage their own responses. I suggest that through an interactive experience, they are taking the first steps towards forging the infant's individual laughter range.

In a fascinating study which assessed infant's responsiveness to emotionally laden vocal cues, it was shown that infants had a stronger reaction to a crying vocalisation than to a laughing vocalisation (Biro, Alink, van Ijzendoorn, & Bakermans-Kranenburg, 2014). However, these vocalisations were paired to interactions amongst animated oval shapes. Whilst this study is invaluable in terms of the author's suggestion that 'infants are able to integrate vocal emotional cues in their representations of observed interactions' (Biro et al., 2014, p. 263), the study is entirely devoid of any real world context, unless that is, infants are doomed to grow up in a society in which evil parent ovals abandon baby ovals while laughing with impunity.

Since caregiver interaction appears to be so crucial to the process of refining laughter, a point of interest here, which was beyond the scope of the current study, is the possibility that attachment style may well be a factor which could influence the use of laughter in early childhood. Indeed, one's experience of the management of discord through laughter as an infant may well have implications for the use of laughter in adult life and this may go some way towards explaining some of the individual differences which appear later in life and which present as behaviours such as nervous laughter.

Moving beyond infancy, at a later stage of development, children are exposed to more varied experiences through interactions with their peers. Having benefitted from the early learning interactions with caregivers when a laughter reaction occurs, children are then in a position to develop their laughter control as a means to tolerate the mildly stressful

challenges of play chasing for instance, as described by a primary school teacher of primary school entrants:

> I mean children laugh a lot when they're having fun. They mightn't even know it. It's a physical reaction I think sometimes. If they're being chased. (Annette – Primary School Teacher)

Importantly, learning experiences and indeed emotional development or conversely, regress to disorder, does not cease in childhood and can and does, in a general sense outside of laughter, continue throughout the lifespan (Yiend & Mackintosh, 2005). This has implications, not only for general well-being and the effectiveness of wide-ranging social interactions, but also for the individual's range for laughter. How one understands and uses laughter continues to be refined, even in adulthood, as the below quotation from a discussion of the experience of a first time AA meeting attendee portrays:

> For as long as I can remember, I've always been a serious person. I can't remember ever doing something just for fun or to have a laugh. There always had to be a purpose for what I did in my life, or else it was of no value. As for being able to laugh at myself, that wasn't even in my frame of reference. When I came in the doors of my first Twelve Step meeting, I was amazed that, even though all the people I met had problems, they were still able to look at their mistakes and realize that didn't make them a bad person. Even more heart-warming was the fact that I heard laughter in those rooms. Before, I had always thought that when someone laughed at what I said, they were laughing at me, and that would reinforce my feelings of inadequacy. (Anon forum contributor – Google alerts)

The benefit of such lifelong learning is that with experience, including the experience of witnessing others in a similar emotional state managing to laugh during challenging circumstances, a person can learn, even as an adult, that laughter may be a useful tactic for dealing with the negotiation of life's discordances and they may adjust their previously restricted laughter range accordingly.

In addition to being indicative of a process of adjustment of the laughter range, the above quote also indicates a process by which laughter can help to form a sense of community in situations where a closed group can laugh at their shared experiences, for only they

have the right to laugh at it. The notion of ‘earning the right to laugh’ is explored in greater detail in **Section 6.6. Interpersonal Expectations.**

In summary, for a child who has a temperament which is conducive to laughing in order to manage discord and who is also fortunate enough to experience attentive parenting, which implicitly teaches that laughter is a means to negotiate discord, this understanding is regularly reinforced in the infant through her early months and into early childhood. The repertoire for the use of laughter will expand in time in response to new stimuli. When the stimulus of ripping paper, for instance, is habituated to and fails to elicit surprise any longer, new methods for laughter lessons are created by the responsive parent, in line with the child’s development, thereby continuing the process of instigating and negotiating novel tensions by means of laughter.

This learning process does not end in childhood and one can develop new understandings of laughter as one matures and is exposed to new challenges. Whilst the groundwork for developing an ILR may begin in infancy and continue to develop throughout childhood, even adults can learn to overcome particular challenges through the use of laughter and can consequently expand the range within which they laugh.

6.3.3. Novelty and Habituation

As was mentioned above, there is a pervasive belief that children laugh more than adults because they are more care-free and because they have less stressors hindering the joyous act of laughing which adults are, by comparison, cheated of, because of excess psychological pressures. There may be elements of truth to aspects of this notion, as adults are certainly more tuned in than very young children are to the configuring power of social pressures, which inform one when not to laugh at inappropriate times:

> The two of us would be roaring laughing and other people there would be horrified. It's something about rocking the boat of cultural norms. You're meant to play ball and you're meant to grey yourself down. (Margaret – Interview participant)

Adults may not be afforded the luxury of being as care-free as children, even if they are under no other apparent configuring stress, other than that to conform. However, as will be explored later, children are taught to conform to social norms by laughter gatekeepers. Furthermore, there is an inherent suggestion above that children experience less stressors, which is why they laugh more. While this may be true of children experiencing a lack of adult type stressors, such as how to pay the mortgage, or whether one's job is secure, laughter did not develop to negotiate states of extreme stress (although it has been co-opted by behaviours such as humour to do this). Rather, it developed to negotiate tolerable and minor disruptions, the likes of which are abundant in the life of a child who has not grown used to many everyday occurrences.

There is more to the tendency for children to laugh more than adults (Provine, 2000) than might seem apparent. What is a striking peculiarity as regards children's laughter, when compared to adult laughter, is the extent to which they can laugh repeatedly at the same stimulus, including formal attempts at jokes. In fact, Bernadette described several incidents in her interviews in which she provoked laughter from the children in her Montessori with her actions, with the consequence of her being asked to repeat the actions numerous times, much to their merriment, but to her eventual discomfort:

> I literally had a pain in my face, from pretending to laugh at the same thing. (Bernadette)

A similar ability to laugh at repetitive stimuli was mentioned in discussion of a slightly older age group of primary school entrants (aged 4-5):

> They'll tell a joke that's not funny at all, like 'Why did the elephant cross the road?' and they won't have an ending. They'll keep telling the same joke with a different ending, but they'll laugh hysterically at their own ending for it. They'll try to outdo each other with those kinds of things. They find it funny, because they don't know it's not a funny joke, because they're genuinely laughing. They're hysterically laughing. (Annette)

Evidently, young children simply aren't as prone to habituation to laughter provocations as adults are. If adults were as tolerant of repetition in attempted laughter provocations as children, then the job of a stand-up-comedian would be a lot simpler.

Habituation has been defined as the "response decrement to repetitively presented stimuli" (Thompson & Spencer, 1966, p. 17). Clearly, this basic principle of learning does not apply only to attempted laughter provocations. Rather, it is a fundamental process in the eventual development of selective attention – a process which is dependent upon the development of the prefrontal cortex, "a brain region which is known to develop until late adolescence" (Muenssinger et al., 2013). Whilst this developmental difference may indeed contribute to differences in what people laugh at, right up to adolescence, no evidence to that effect arose in the current study. This may however be a point of interest to future studies of laughter and humour going forward.

Whilst habituation has been shown to occur prenatally (Sheridan et al., 2008), the speed and extent to which an infant habituates to repetitions of a stimulus has been demonstrated to be slower than in the case of adults (Muenssinger et al., 2013). Muenssinger et al, go on to postulate that differences in degrees of adult versus infant myelination is likely to account for little of the difference, and that "developmental aspects of higher cognitive functions as attentional mechanisms could be a further possible explanation for the difference between the two groups." (Muenssinger et al., 2013, p. 5).

In addition to the specifics of habituation, children must go through a process of developing the cognitive ability to comprehend why it is that many events in their world happen, or why it is that people behave in certain ways. As a consequence, many things seem 'funny' to a child and "They'll laugh at anything" (Bernadette – Montessori teacher), while the same stimulus might barely draw the attention of a habituated and cognitively advanced adult.

The development of the executive function required to comprehend when an experience does not tally with expectations, a generalised skill which becomes apparent in evidence evaluation skills of children attending kindergarten (van der Graaf, Segers, & Verhoeven, 2018) and the development of a theory of mind which allows a child to understand the intentions of another (Sanefuji & Haryu, 2018) are early cognitive developmental processes which also have potential to influence laughter development.

To reiterate a behavioural example of the means by which we develop the wherewithal to apply appropriate reactions to slight discord, I return to the earlier case of the infant laughing at his mother's sneezes. Whilst the infant's recognition of discord is dramatic and obvious in its presentation, as he develops, so too will his ability to control his automatic reactions to unexpected incidents. This will develop alongside advancement of his repertoire of alternative reactions. As adults, we have grown accustomed to people blowing their nose and unless the incident is particularly unusual, or shocking in some manner (such as a cartoon style trumpet sound, with accompanying fluttering hanky), adults are unlikely to laugh at such an incident – yet to the infant, the discordance was sufficiently novel and emotionally stimulating to make laughter's state shifting properties a suitable reaction. Over time the stimulus does not change, but the reaction to it does.

In summary, for the reasons laid out above, it makes sense that children laugh more than adults. Children experience the world from a less advanced developmental stage of cognitive understanding, which provides more novel and unexpected stimuli for them to experience. They also require a longer period of exposure to a stimulus before habituation occurs, in comparison to adults. In essence, a young developing child is regularly exposed to new experiences, which violate his expectations and which present minor tensions, ideally suited to being processed by means of laughter. Until the child habituates to such experiences, laughter will remain as a viable means for negotiating such experiences of discord.

6.3.4. Individual Differences

A central premise of the current theory is that each individual has a range within which they have increased opportunity for laughter and outside which they are less likely to laugh in comparative terms. Each individual differs in this regard, as has been picked up on by a person who spends each working day surrounded by children:

> You can see how each of them differs and what pushes their buttons [in a discussion of laughter in the classroom]. (Suzanne – School teacher)

Apart from how one might outwardly express laughter, there are also individual differences which reflect how one interprets laughter and as already introduced, these understandings can also be considered to be components of the contextual laughter configuration matrix, in that it is proposed that such interpretations can alter how one implements, or expresses one's own laughter.

Contemporary research which explores the impact of individual differences, and by extension informs us about individual's understanding of laughter, tends to focus upon combinations of gelotophobia - the fear of being laughed (Ruch & Proyer, 2008), gelotophilia – the joy of being laughed at (Proyer & Neukom, 2013) and katagelasticism – the enjoyment of laughing at others (Hofmann, Ruch, Proyer, Platt, & Gander, 2017; Papousek et al., 2009; Proyer, Ruch, & Guo-Hai, 2012; Ruch & Proyer, 2008). Most of this research considers each of these variables, not in isolation, but in a comparative way, exploring the individual differences in these domains with regards to such diverse topics as psychological well-being (Proyer, Ruch, & Guo-Hai, 2012), creativity (Chan, Chen, & Lavallee, 2013), workplace stress (Hofmann et al., 2017) and family relations (Proyer & Neukom, 2013).

Each of these topics of research share the commonalities of sociality and perceptions, or interpretations of the meaning of laughter, as each of them (gelotophobia, katagelasticism, gelotophilia) is a concept of how laughter makes one feel in relation to interactions with other people, whether those interactions are implicit or explicit.

Gelotophobia and katagelasticism also have the concept of ridicule deeply embedded within them. It could be argued that gelotophilia, the joy of being laughed at does not incorporate ridicule so strongly, as the target of laughter does not perceive a contemptuous or dismissive undertone to the laughter. Rather, according to Ruch and Proyer (2009a), such people actively seek out and embrace such laughter. It is a vague possibility of course, that this is a misinterpretation on the part of the person being laughed at, as the laugher may well have intended their laughter to be contemptuous and the target (who is enjoying it) may tend to misunderstand such laughter.

It was Ruch and Proyer (2008) who first introduced the idea of examining gelotophobia as a distinct phenomenon of individual differences. They went on to develop a psychometric instrument, the PhoPhiKat-45 (Ruch & Proyer, 2009a) which also considered the other two components, katagelasticism and gelotophilia as being intercorrelated factors, proposing that "there is a negative correlation between gelotophiles and gelotophobes and a positive relation between gelotophiles and katagelasticists" (Ruch & Proyer, 2009a, p. 183).

While there is robust evidence of the validity of these psychometric measures and the phenomena which they seek to measure (Hofmann et al., 2017; Ruch & Proyer, 2008, 2009a) there is an implication that laughter, or laughter related behaviours which fall within these categories are representative of extremes. However, I propose that while extremes of these types are the exception and that the majority of people are likely to display aspects of each of these traits at different times in different contexts. Indeed, I propose that to experience some degree of each of these traits is to experience a normal developmental path.

It is likely that each of us has laughed at another person at some point in our lives with no intended ridicule. It is also likely that each of us has been laughed at on some occasions and we have relished that experience. At other times we have been laughed at and felt like a target, or perhaps even felt humiliated, even if that wasn't the intention of the laugher. The crucial aspect which transforms each of these events into a fearful, joyous or innocent experience is the interpretation which is applied to them.

Indeed, some researchers have begun to explore the application of positive psychology principles, such as the enhancement of gratitude strategies as a means to alter maladaptive interpretations which some people are prone to apply to laughter when they hear it (Samson, Proyer, Ceschi, Pedrini, & Ruch, 2011). Whilst there is some evidence that a fear of laughter can be traced back to bad experiences of being laughed at as a child (Ruch & Proyer, 2009b), Ruch et al's (2009b) exploration of where gelotophobia is situated in terms of wider models of personality differences, found that while the construct is "well located in a comprehensive model of personality", that "not all of the variance is accounted for by personality". Indeed, they acknowledged that "repeated traumatic events of being laughed at during childhood and adolescence affects the personality development" (Ruch & Proyer, 2009b, p. 630).

As was outlined earlier, the relationship between the individual's laughter range and the wider contextual laughter configuration matrix is interactive, in that the individual, with their personal attitudes and their lifelong experiences, interact with their environment. The environment then provides feedback in the form of the configuring factors, the effects of which are then incorporated in to the individual's laughter range, which is unique to them. Essentially, whilst personality traits may present predispositions for particular outcomes, it is the interaction with experience which may activate or inhibit a particular way of reacting to or producing laughter.

The thoughts of Simon, a school principal who contributed an interview to the research, illustrate this interactional process. Simon, in describing the differing attitudes of teachers to laughter in the classroom stated "Some teachers would find laughter intimidating and a sign of a lack of control." Whereas, other teachers embrace the use of laughter, which he sees as a strength:

> If you enjoy your job, laughter is easier to embrace…If you're in control of the laughter as a teacher, it can be of huge benefit, as a tool for you to use in order to create a good atmosphere in your classroom. A really good teacher uses laughter in a controlled environment, in which the children aren't laughing at somebody, but at a topic. Especially when you're trying to 'win the kids over' by teaching in a fun style. If you don't have laughter as a response, you're not really winning the kids over. (Simon – Interview participant)

These comments indicate how an individual's laughter range will influence their interpretation of laughter. A teacher who enjoys his job and is open to the use of laughter has a broad ILR, which can be used to his advantage in this context as he can benefit from laughter by positively influencing the attention of the children. This approach would not be available to a teacher who understands laughter in terms of a 'lack of control', or 'intimidation'. Such a teacher could be said to have a compressed ILR in the same context.

As such, both individuals could theoretically be expected to interact with an identical contextual situation in different ways.

The teacher's chosen course of action will be interpreted by and will lead to a reaction from the children. This feedback to the teacher, obtained in the form of the children's reactive behaviour, becomes a configuring factor in the contextual laughter configuration matrix. This will further inform the teacher's attitudes to laughter, thereby influencing the parameters of his own ILR into the future. Through this process of interpretation, reaction, feedback and reinterpretation, the teacher's ILR is being socially configured, as is that of the children.

A striking example of this process in action, which offers support for the contextual matrix/laughter range transactional hypothesis, was provided by Simon as he described and event which shows how when a discordance falls within the teacher's laughter range and they themselves laugh, this will be interpreted by the children before they react accordingly.

Simon remembers many instances in which he was "in tears laughing" with a class. He described a particular incident when he fell off a chair in the classroom, which lead to a "little snigger", but when the children saw him chuckling, "the whole place broke down". His ILR gave him the option of laughter in this disruptive situation, which then indicated to the children that they too could laugh. In a follow up interview, Simon reflected that a teacher with a 'laughter as a sign of lack of control' attitude would most likely not have had laughed in the same set of circumstances and that he could imagine, that if a child

were to snigger at the teacher's misfortune, that the children would not be picking up a feedback signal to 'break down' laughing.

> You have to be able to accept those things, but it's a personality trait. Some people would be very flustered in an office and hope nobody saw them, but in a teaching situation, you can't, under any circumstances, take anything to heart. (Simon)

The quotation above exemplifies the role of personality in configuring the laughter, but as discussed earlier, the influence of personality is not the only configuring factor. Had Simon been injured by his unexpected fall to an extent which made him cry out in pain, no matter what type of personality he had, an incident such as this would have caused him so much physiological discordance as to override any possibility for laughter, thereby rendering laughter unavailable to him as a reaction. This is why the c*ontextual* aspect of the laughter configuration matrix is so important and why people don't laugh at every discordance which they experience, despite their individual propensity for laughter. The same event in a variation of circumstances can lead to entirely different and more adaptively appropriate reactions than laughter in particular contexts.

Simon discussed how a chorus of laughter from the children in response to an injurious fall would have been highly discordant with the situation and depending upon the contextual circumstances, may have required reprimanding. Such reprimanding would then be an example of the teacher's actions becoming a configuring factor in the laughter configuration matrix, which in turn would influence the laughter ranges of the children going forward. They would learn that it is not considered appropriate to laugh at someone else's injury in that context.

The preceding discussion has been focused upon the interaction between the social world and the particular psychological makeup of individuals which occur in typically developing people. However, it would be remiss not to mention that there are particular developmental conditions and disorders which alter how one experiences and expresses laughter. One such disorder is autism and research has shown that children with autism laugh "'primarily in response to positive internal states, rather than using laughter to negotiate social interactions." (Hudenko et al., 2009b, p. 1392).

This finding has implications, not only for the understanding of autism, but also for the general understanding of laughter, in that it implies a social imperative to laughing which may not be available to all. Earlier research which had compared humour and laughter in pre-school aged children with autism and similarly aged children with Down's syndrome had unearthed a similar finding of a dearth of sociable laughter amongst children with autism, in comparison to their peers with Down's Syndrome (Reddy, Williams, & Vaughan, 2002). Those with Down's Syndrome expressed a far greater tendency to make attempts to evoke laughter in others through 'clowning', 'teasing' and 'repetition' (Reddy et al., 2002).

There was however no typically developing comparison group in this particular study, which would have been of benefit as the researchers could have explored if the apparent tendency for infants with Down's syndrome to smile at times when typical children laugh carried forward into this age group (Cicchetti & Sroufe, 1976).

Individual differences are also apparent through consideration of the personality disorder of psychopathy, with psychopathic traits being strongly related to obtaining pleasure from laughing at others (Proyer, Flisch, Tschupp, Platt, & Ruch, 2012). Furthermore, the authors proposed that while psychopaths may obtain pleasure from laughing at others, they also obtain pleasure from being laughed at. However, they propose that this pleasure stems not from the laughter itself, but more indirectly, from the satisfaction of manipulating others through laughter provocations. Below is a quote in which the anonymous author, who described himself as a diagnosed psychopath, tackled the topic of laughter. He stated:

> If I'm in the process of making someone like me, establishing some form of relationship…I always make sure to "share" the other person's sense of fun and humor, and I do it well…When I do laugh, really, truly laugh, I almost always do so when I'm alone (Anon blogger – Google alerts).

Apart from developmental and personality disorders which influence laughter, there are a large number of pathological conditions which can also alter the typical progression of laughter. Robert Provine offers an excellent summary of many of these diseases in his book 'Laughter, A scientific Investigation' (2000). Provine details many conditions which interfere with typical laughter as an indirect consequence of such varied origins as

poisoning, cannibalism related neurological damage, gelastic epilepsy and variants of motor neuron disease, to name but a few. Provine cautions at the beginning of his discussion of the topic:

> Although pathology indicates that some parts of the brain are more involved than others in laughter and humor, we should be wary of reports that a single brain centre/gene/neurotransmitter is responsible for the complex and distributed processes. (Provine, 2000)

In making this statement, Provine acknowledges that individual differences in brain physiology can interfere with the behaviour of laughter and may therefore be implicated as important brain regions for aspects of laughter. However, laughter is, as is proposed in the current theory, a multifaceted (and thereby multi-modal) whole brain behaviour, which depends up cognitive and emotional aspects, interacting with social influences. When parts of this multi-modal system break down, the consequences can be disturbing at the mild end of the spectrum and pathological at the other.

For instance, Pseudobulbar affect (PBA), which is “characterized by uncontrolled crying or laughing which may be disproportionate to social context”, is described as a “disinhibition syndrome in which pathways involving serotonin and glutamate are disrupted” (Ahmed & Simmons, 2013, pp. 483-485). Indeed, sufferers of this particular disorder are typically substantially impacted by their inability to configure (or inhibit) their laughter behaviour in accordance with socially normative expectations. According to Ahmed et al, they may withdraw from social interactions and suffer a lower quality of life, due to “embarrassment for the patient, family, and caregivers” (Ahmed & Simmons, 2013, p. 483). PBA can therefore be described as a neurological manifestation of a breakdown of the configuring powers of the laughter configuration matrix. Socially normative expectations related to laughter are explored in greater detail in the following section.

In summary, individual differences with regards to interpretations of the laughter of others and also with regards to one’s own laughter alter the understanding and expression of laughter. Individual differences are also apparent with regards to how and under what conditions one implements and uses one’s own laughter, including goal-oriented laughter. Whilst personality traits can be connected to particular approaches to

and understanding of laughter, this is not the entire story, as there is an interactive relationship between contextual factors and the individual's own propensity for laughter.

6.4. Social Factors

Prior to undertaking an exploration of the many social factors which emerged as salient to the laughter configuration matrix, I wish to acknowledge that all observational and interview data was all collected from within Ireland. A great deal of additional data was collected from my own curated online forum, which did not restrict participants to any geographical location. Further data was gathered from opensource online forums and broader 'random' data sources, the latter being dependent upon information served up by a Google algorithm. However, it is likely that this data, as with my own forum, was not completely random, as it was restricted to that which was in the English language, thereby excluding a great deal of potential data. It is therefore an imperative to point out that the current discussion of the social factors which configure laughter, may be a western societal perspective.

Indeed, while laughter has been shown to occur universally and cross culturally (Bryant et al., 2016a), evidence from the current theory suggests that laughter is not necessarily used in the same manner or with the same conventions as it is in Ireland, or indeed in western societies in general. In a research interview, Daniel - a professional clown, described an 'unusual experience' he had when he was involved in a clowning roadshow in Africa. He described that when he performed in a particularly isolated location:

> There was often a very different kind of response [from laughter]…their kind of convention was to make a kind of whooping sound. It was kind of like high-pitched undulations. (Daniel)

The cultural context which Daniel experienced was not one which resulted in the stereotypical western response of clapping and laughter. Perhaps, as Daniel proposed, it was the unusual sight of white men, who would normally be representative of "the British council, or aid workers, or people coming over to help them", making fools of themselves, rather than taking a position of authority, which lead to an inhibition of the audience's laughter. However, it is also possible that social conventions around when and under what conditions one laughs are entirely different across different cultural settings.

Indeed, given the forthcoming discussion of social laughter parameters and how social expectations can alter the likelihood of laughter occurring, such an assertion seems not just relatively likely, but highly likely. It is with that acknowledgment in mind that I now turn to the topic of the configuration of laughter by social factors.

Based upon Provine's (2000) empirical research that laughter occurs more in social settings than in solitary, the question arose as to why, in terms of this grounded theory, if laughter is a phenomenon which activates in order to negotiate discordance provoked tensions, is it that laughter might occur so frequently in social settings, by comparison to laughter in solitary settings?

Pleasurable aspects of laughter certainly promote people's desire to seek out laughter (a point discussed in more detail in chapter 7). As such, the concept of people obtaining the pleasures of laughter by choosing to be in the company of others who also seek out laughter related pleasures becomes apparent. However, it is also proposed that there are further aspects to higher rates of social laughter, those being:

A) Increased incidences of semi-reflexive laughter occurring in response to unexpected discordance and

B) Increased opportunities (sometimes perceived necessities) for goal-oriented laughter in social gatherings.

Taking the latter point first, as I mentioned earlier in my elaboration of the meaning of the word 'negotiate' in terms of this study - laughter can be goal-oriented, as well as being semi-reflexive. Hence, laughter of the goal-oriented type can be emitted in the negotiation of a perceived social discordance, even if the discordance is one which it is believed may occur, but hasn't yet.

The following quote by Martin describes how he laughed along with a stranger in a shop, even though he didn't know why he was laughing:

> You laugh because the other person is laughing and it's just too socially awkward not to laugh. (Martin – Managed forum)

Martin laughed in a goal-oriented manner to prevent potential embarrassment as he failed to comprehend why the other person was laughing. This is an ideal example of strategic, goal-oriented laughter being implemented in the negotiation of a *perceived potential discordance*. This is not a straightforward stimulus response process.

Another person in the same situation may have no inkling of, or interest in the potential embarrassment of the incident and polite laughter may not have even entered their mind. That said, I propose that the scale of opportunity and potential for the need for volitional laughter is greater in a social situation than it is in a solitary situation.

In essence, goal-oriented laughter, unlike semi-reflexive laughter, could potentially occur to any degree, under any circumstance, depending also upon the individual's adherence to laughter restricting social norms. Furthermore, quite distinct from its discordance management efficacy, goal-oriented laughter can be emitted by choice for no apparent reason. However, to feign laughter out loud, for no apparent reason in a social setting would certainly be an example of laughter occurring outside of typical social norms.

Such cases are entirely possible, but unlikely to account for a large amount of everyday laughter. I propose that volitional laughter could account for a great deal of Provine's figure of 30 times more laughter in a social settings (Provine, 2000). Since goal-oriented laughter's use is most obviously beneficial as a social tool, rather than a solitary tool, a person in a solitary setting is less likely to use goal-oriented laughter.

Secondly, social interactions are highly complex interactions, which are peppered with idiosyncrasies as well as predictable behaviours. According to body language experts, a single interaction can offer up a range of signals which can be intentional or unintentional and can vary from being subtle to being explicit in expression and meaning (Morris, 2002). Added to this mix is emotionality. Emotional reactivity and emotional expressions can occur at all levels, from adoration to hatred. Furthermore, nuances of expression and behaviour can lead to misunderstanding of meaning. Hence, there are vast possibilities as to how a social interaction can process out and as such, there is great potential for confusion, misinterpretation and of course, associated experiences of discord. Discordance is therefore a regularly occurring property of social interaction.

Even a physically distant social interaction, such as conversing electronically by means of typing (which is lacking the extra complexities of visual and auditory nuances), is still highly complex and offers a myriad of opportunity for unexpected events, which are open to interpretation. Hence the integration of smiling emoticons (Ganster, Eimler, & Krämer, 2012) and such abbreviations as LOL (Laugh out loud) and ROFL (Rolling on the floor laughing) into the lexicon, as a means to clarify when a comment is meant to be, or is interpreted as being a laughter provocation.

Humans are not flawless. We make mistakes and we are unpredictable. It is this unpredictability therefore, combined with the ability for humans to laugh volitionally in a goal-oriented manner, which provides the explanation for why it is that most laughter occurs during social interactions.

Given that laughter is predominantly a social occurrence, attention now turns to the social factors which configure laughter's expression in form and frequency. These factors are broken down into the broad configuring factors which help to form *Social Laughter Parameters*, after which the discussion turns to more personal, but still socially configured *Situational & Interpersonal Factors.*

6.4.1. Social laughter parameters

The term *social laughter parameters* is a representative construct for the social factors which configure laughter. As with the zone of potential laughter activation, there are soft parameters which guide, but don't necessarily fully control whether laughter occurs, as these parameters are an aspect of the wider laughter configuration matrix, which consists of individual differences, situational and interpersonal factors and the wider social forces interacting with each other.

There are particular aspects of understanding which combine to form and maintain these social laughter parameters through an interactive configuring process. These aspects are:

Instigation - Consideration of that which caused the laughter.

Interpretation - Understanding or perhaps misinterpretation of the intention of the laughter

provoker.

- Understanding or perhaps misinterpretation of the intention of the laugher.

Impact - Consideration of how the laughter impacts those who are party to it (laughers and/or audience to laughter)

How one understands these aspects contributes to a social configuration of laughter. This point will become clearer in the context of the consideration below of the appropriateness (or inappropriateness) of laughter and later, in section **6.4.1.3. Interpretations**.

6.4.1.1. Appropriateness

Interpretations of appropriateness and inappropriateness of laughter are some of the most powerful of the influential configuring factors in the laughter configuration matrix, which in turn, influences the parameters of an ILR. This section aims to explore the processes by which this occurs, along with the consequences.

> You definitely get approval to laugh out loud. Very few of us are comfortable with extreme levels of emotions publicly. You don't roar with laughter, you don't burst out crying, you don't scream and shout when you're angry. At home you might, but in public you won't. So, when it comes to something like comedy in public, if enough people start to laugh, then you feel 'this is ok, it's acceptable to laugh here.' (Sam – Interview participant)

In society, understanding of what behaviour is appropriate and when it is appropriate develops through experience and sometimes through formal teaching. This is no different for laughter, a behaviour which, as the above quotation portrays, is configured – not only through social displays of when it is appropriate to laugh, but also through social displays of when it is inappropriate to laugh.

Underlying an individual's propensity for laughter are particular socially informed beliefs. These beliefs can alter not only how responsive one is to laughter, but also how likely one is to use laughter, not only in particular circumstances, but also in a more general sense.

Laughter's expression is configured by many factors, including religion, a powerful sociocultural force. Being exposed within one's religion to interpretations of religious texts can alter how one understands laughter. For instance, data arose in which it emerged that rather than risk the possibility of offending a deity or prophet by laughing too much, or at inappropriate times, it is considered best by some to limit laughter as much as possible.

In some interpretations, using laughter as a means to relieve tension can be understood as problematic, as laughter is distracting the individual from what might be considered

to be the optimal form of anxiety reduction - praying. In this sense, laughter and the 'comedian' referred to below are in direct competition with the religious teachings and such behaviour is best supressed. The quote below appeared in an online publication called *Arab News*:

> The problem is that some people use laughter as a safety valve or release from their stress and worries, resorting to an inferior means rather than what is better. The Muslim should know better, and should treat worries and stress in the way prescribed by the Prophet (peace and blessings of Allah be upon him). When something was troubling him, he would pray.
>
> Resisting the urge to laugh as much as possible, as well as trying to stop others from laughing. There may be a gathering where the people are accustomed to laughing and chortling most of the time. So, the Muslim must first suppress his own laughter, just as he suppresses a yawn, then he should advise the other people present and help them to control themselves.
>
> There is a lot of goodness in people, praise be to Allah, and they are ready to respond to the one who wants to reform them and improve them. This can be achieved in a number of ways, such as telling them how bad it is to laugh and make others laugh, because it can lead to lies and falsehood when the "comedian" cannot find a true story to tell, so he makes up a tale from his imagination to make people laugh. (Kamdar, 2013)

Whilst the above example is a stringent and prescriptive approach to the appropriateness of laughter, not all teachings with regards to appropriateness of laughter are as distinct. During data collection, many examples occurred of recollections by adults of childhood experiences, when fits of unintentional laughter prevented them from verbalising their lack of intention to insult or disrupt peers, or an authority figure with their socially inopportune laughter.

However, whilst the authority figure's interpretation sometimes resulted in unilateral punishment, what was vividly memorable in numerous cases was the occurrence of a collective abhorrence from their peers to their laughter. This collective abhorrence has a powerful social impact, and hence, is a powerful configuring factor. Recollections of such an intense form of social chastisement by laughter gatekeepers, can last quite some time. This is indicative of social learning associated with laughter, as the quote below from a discussion of inappropriate laughter suggests:

> There was a boy who tried to get out of doing something by saying that his sister just got diagnosed with cancer. I just started busting up. I knew he was lying…I got the nastiest looks from all 60 people in the room, which made me laugh even more. He was forced to tell the truth in the end, but I was still the ass who laughed at it. (Anon forum contributor – Google alerts)

In this case, the laugher, who was not laughing at children with cancer per-se, so had a lack of any intention of malice in that sense, was silently admonished for a laughing at what he understood as the absurdity of a non-truth – the initial point of discord which was the instigation of that laughter. The context of that non-truth being a socially unacceptable non-laughing matter of childhood cancer (a powerful social interpretation) ensured that the topic was socially highlighted as a non-laughing matter going forward in time. Misinterpretation of the point of instigation of laughter in this case led to the chastisement. Had the fact that his classmate was lying been apparent to the rest of the class, perhaps group laughter would have occurred as no social parameters would have been broken.

Whilst this sort of social highlighting by laughter gatekeepers will influence different individuals to different degrees, I propose that the learning opportunity will ultimately be significant and will configure laughter amongst that group, throughout their lifespan and potentially contribute to a social laughter parameter which generalises to the insensitivity of laughing at matters of serious ill-health.

People implicitly learn that laughter has an impact, not only upon themselves, but also upon others. This understanding comes from observations of the reactions of others to their own and to other people's laughter, in addition to their own experiences of reacting to another person's laughter. Some people may recognise laughter as an unfortunate occasional response to stressful events, whilst others may react to laughter with horror in a given circumstance. Indeed, one participant reported how she was essentially shunned by her mother in law for many months for laughing during a family member's funeral. This is quite an impact for laughter to have.

Such broadly different interpretations of the meaning of someone else's laughter can lead to very different consequences, including shared mirth, anger, suppression of

laughter, or in stark contrast, an uncontrollable ‘laughter loop’. So influential are these interpretations that I propose that a laughter loop – a situation in which an individual can’t stop laughing, even when they know they should, is caused by the laugher’s interpretations of their own laughter as being disruptive to others and thereby, a social discordance in its own right - beyond the original discordance which set the initial laughter off. The laughter itself becomes discordant with the seriousness and ‘inappropriateness’ of the situation, thereby escalating the laughter even further, as shown in the examples below:

> I tried so hard to keep my laughter silent, but that made it funnier and eventually I cracked under the pressure of my own amusement and had to be escorted out of the building to calm down. (Anon forum contributor – Google alerts)

> Ah – the infamous giggle loop has gotten me many a-time. The worst was during a [commemorative] moment of silence. That one was hard to live down. (Anon – Reddit)

> Somehow, having the rest of the adults glaring at us made it even funnier. (Anon – Reddit)

> I totally thought he was kidding and I laughed my face off. When my friend told me he wasn’t kidding [that his mother had died] I just laughed harder because I felt awkward. The laughter went on for a good five minutes and the entire time, I kept apologising. (Anon – Reddit)

Whilst the above examples all contain laughter and consequently appear to contradict the concept of social laughter parameters configuring the likelihood of laughter occurring, this is not the case. These are examples of events which stood out, years later, for the people recalling them. What made these events so memorable is the very fact that the laughter described in each case did not fall within the social laughter parameters. The failure to respect the social laughter parameters led to embarrassment and social judgement, which was apparent in the behaviour of others. This is what made the events so memorable.

The appropriateness of laughter is a socially constructed concept, which is susceptible to change over time and is dependent upon a tranche of contributing factors. These

factors are broad in scope and can range from the influence of the aforementioned established religious teachings, to contemporary trends, such as the overzealous promotion of the apparent health benefits of laughter, which are disputed by Martin (2002).

Prevailing political circumstances can also assert a powerful influence over the extent to which laughter is deemed appropriate in a given place and time, as the Turkish Deputy Prime Minister Bulent Arinc exemplified in 2014, when he said of women:

> She will not laugh in public. She will not be inviting in her attitudes and will protect her chasteness (Winter, 2014).

A common theme which has emerged in this grounded theory is the extent to which authority plays a role in defining the appropriateness of laughter. However, in terms of the current section, the primary focus is less upon the explicit dictates of political figures and more to do with the implicit processes which construct concepts of appropriateness and thereby forming social laughter parameters in various social settings, including institutions – both formal and informal.

Once an individual enters the realm (physical, or conceptual) of an institution or socially organised group/body, they are under the influence of *institutional laughter parameters*, particularly if they are receptive to socio-cultural norms. These parameters are maintained by laughter gatekeepers. Gatekeepers may, or may not be conscious of the role they are playing, when they send explicit or indirect signals of laughter's appropriateness in a particular setting. Examples of institutional laughter parameters abound, but are markedly obvious in educational settings for children, where children are explicitly and implicitly taught when it is appropriate to laugh or not. These teachings are some of their earliest introductions to institutional parameters and they contribute to the formation of their individual laughter range:

> We had a little guy here. He would do anything for attention seeking. He was trying to get attention...misbehaving, and he'd laugh really loudly himself. He'd say something, laugh real loud, then go on and say something else and laugh really loud. For the first minute it worked, because the kids all gave him the attention and laughed, but we said 'No, he's interrupting the circle time while someone is singing their

> song, or telling their story and it's not fair.' So, then the other kids knew to ignore him. (Orla – Montessori teacher)

Whilst institutional parameters may act to inhibit the laughter of a child, they may also broaden the child's range for laughter, through disinhibition, depending upon factors such as the child's temperament, or indeed, the family context from which they have come, as well as the context of the school to which they are entering. Upon entry to a Montessori for instance, the child will be experiencing a new social world, in which they may find that the teachers promote play and laughter. These broadening configuring factors will serve to increase the likelihood of a timid child laughing in that context. The following incident describes just such a situation:

> They are very responsive to a happy adult. I think that they find that when an adult laughs a lot, I think they get a lot of security. I had an incident last year. A little girl, very tender. Never been minded outside of the home and we were playing with modelling soap and she loves anything messy. We had a little game, the two of us. We were playing with the foam and I put a little bit on my nose and she laughed and she thought that this was hilarious. Next thing, she gets it and slaps it all over my face. I have a fabulous photo of her just roaring…the two of us, roaring laughing at ourselves. She had it all over her face, all over her hair…it just depicted the happiness in her. (Bernadette – Montessori teacher)

There can also be layers of micro-institutions within a parent institution. Consistent with the aforementioned examples which are related to children in Montessori, is the example of a classroom within a school. The child conforms to the parameters which the teacher sets in the classroom, the micro-institutional parameters of the classroom conform to the wider institutional parameters of the school and the institutional parameters of the school conform to the contextual socio-cultural factors which prevail at that time in wider society. Laughter occurring outside of these normative parameters can be disruptive.

The combined effect of all of these socio-cultural factors acting upon the child's individual laughter range and hence, their tendency to laugh or not is the crux of the contextual laughter configuration matrix concept. All factors of the configuration matrix have the potential to interact with each other and influence the other factors, filtering from as broad a setting as the wider social sphere, right down to micro-institutional parameters of a classroom and indeed, the interpersonal interactions which take place within that setting.

The filtering down effect of a wider socio-cultural change and its consequential effects on institutional and micro-institutional parameters can be seen in the case of an update to the Irish primary school curriculum for teaching, a change which was sanctioned at government departmental level and gave rise to opportunities for teachers to be more interactive in their teaching methods than they previously had. Prior to 1999, teaching methods had been less interactive, not having been revised since 1971 (N.C.C.A, 1999). Such major changes to an entire curriculum do not occur without influence from wider society, as was acknowledged in the document's introductory chapter:

> The last major revision of the curriculum for primary schools was Curaclam na Bunscoile (1971). Since then there has been a combination of educational, economic, social and cultural developments in Irish society: these developments have been taken into account in this revision. (N.C.C.A, 1999, p. 2).

This socially informed transformation in schooling policy has, over time, trickled down into schools – thereby influencing institutional laughter parameters and then inevitably, classroom policies, or micro-institutional laughter parameters. The contrasts between the more contemporary policies and the older policies are exemplified in the following experiences of Suzanne, a primary school teacher who describes herself as someone who "naturally loves laughing and wants to laugh" (contributing to micro-institutional parameters of her class). She works in a school in which she and other teachers described how "laughter is embraced" (wider institutional parameters of the school).

Suzanne explained how she makes most of the opportunities which the curriculum gives her to promote laughter filled interactions: "The curriculum includes playing games and teamwork, which always leads to a bit of laughter from them". This contrasts with her memories of her own schooling, when it was a case of:

> Teacher knows everything and you do what teacher says. That's the end of it. You learn and you go home and you don't get a relationship going. Now, it's much more focused on having a relationship with the children. (Suzanne)

Suzanne's techniques include having the children crawl under the tables and stand on chairs. She states that she feels that "getting them to do something that they shouldn't be doing" results in laughter, which consequently results in an environment which is more conducive to learning – "If there is any little thing you can do to make it slightly more memorable, they'll retain it better."

Such major changes to styles of teaching are indicative of how temporality of appropriateness alters the wider configuration matrix gradually. What may have been considered to be unacceptable and unruly behaviour in the classroom of the 1970s has, as a consequence of socio-cultural changes, become a desirable attainment in present day settings. The important point in this regard is that the prevailing socio-cultural policies can and do change over time and these factors influence the incidence of laughter in institutional settings.

This notion need not be limited to school settings. Whilst the grounded data in this study which most strongly indicated institutional parameters was collected across Montessori and primary level schools, interviews with professionals in commercial settings and a comedian who has experience performing in organisational settings, suggest that it could theoretically be applied to any institutional setting, with the same principles applying.

As such, the terms c*lassroom parameters* and s*chool parameters* could as easily be replaced with *department parameters* and *section parameters* in a work place setting, with the department and section managers taking lead from the human resources department and CEO, in place of teachers taking lead from school management and principals.

In summary, institutional parameters are emergent properties of the wider socio-cultural context of a place and time. These parameters offer a guiding framework, within which individuals are informed implicitly, through observing the behaviours of others and explicitly, through the direct instruction of gatekeepers, under what circumstances it is 'appropriate' to laugh. People are not automatons however, so while these institutional parameters inform their individual laughter range, thus tempering (or promoting) their tendency to laugh, individual differences ensure that laughter can and does occur, even in the most socio-culturally 'inappropriate' of circumstances.

6.4.1.2. Inappropriateness

As mentioned above, laughter which breaches the socially constructed and maintained normative expectations of social laughter parameters is often described as inappropriate. A common example is laughing at a funeral. An extreme example of the consequences of a mismatch between social laughter parameters and an individual's laughter range is provided by Marianne, who attended a funeral at which an unfortunate incident set her off laughing, much to the annoyance of fellow mourners:

> The crypt was at ground level, then there was an angle to get the coffin in to this room, but someone hadn't worked out the depth of the coffin and the angle to get it in. It was a traditional Orthodox funeral, there wasn't a joke to be had anywhere. It was the furthest point removed from mirth. They couldn't get it in, and it was getting really interesting.
>
> So, they had to take the lid off and at this point, all the men were offering suggestions. I was looking at them, but nobody was looking...they were all looking at the hole that it was going in and my eye travelled further up. And I was thinking, 'Oh, oh. I know what's going to happen.' I couldn't speak, but the body was coming out like this, and he was standing up...nobody could see it, except me and I went 'Aagh!', just as two of them put their hands up to catch the body as it came out. I was in hysterics. It was the funniest. My son was on the ground as well.
>
> My sister in law didn't speak to me for about three weeks, but I thought it [the event] was hilarious. I know there were other people there who wanted to laugh, but because it was such a staged display of grief, that it was not on [to laugh]. I knew that I would be ostracised for quite a while. (Marianne – Interview participant)

Of interest was Marianne's insistence during the interview that her laughter in this case was not what would typically be termed 'nervous laughter'. She wanted to be clear that her laughter occurred because she thought that the disparity between the solemnity of the mourners and the ludicrous nature of the corpse almost falling from the coffin was hilarious.

The source of her laughter was not unknown to her. Marianne described herself as someone who will laugh when something is funny, despite the reservations of others and despite the fact that this often gets her into trouble. Marianne could be described

therefore as a person whose laughter range is less easily configured by the tempering, or laughter inhibiting influence of social laughter parameters.

As mentioned earlier, people will be responsive to social norms to greater and lesser degrees and those who are less deferential to social normative behaviour will likely have a laughter range which is a closer reflection of their own personality and personal beliefs than their reactivity to societal norms. The following comments from a psychotherapist are useful in that regard:

> I think laughter is a lot to do with power. You don't see many people that are in big and powerful positions that are roaring their heads off laughing, do you? We're all going around with our false self, with our constructed sense of identity...hiding behind it. There's a lot of false self being projected outwards. It's like losing face or something if you're laughing. You can't hold a strength position and laugh. You can't be soft and strong. The interesting thing is that there's anything but soft about someone who has enough strength and confidence to be able to laugh. If you see the Dalai Lama laughing, you're under no illusions how strong and powerful he is. (Barbara – Interview participant)

This lack of social laughter inhibition is a trait which can lead to a discomfort in others, which they may seek to alleviate through conspicuous action taken against the laugher in an attempt to prevent them deviating from the norm again. In Marianne's case the conspicuous actions taken were the inhibition of laughter by the other mourners, as a signal that laughter was not appropriate in this context and to a greater extent, the ostracisation by her sister in law for several weeks.

However, ostracisation is not the only adverse reaction to laughter which serves to maintain social laughter parameters. The range of adverse reactions to laughter which are apparent in my data were varied across a number of apparently unrelated settings. Such examples range from the postponement of political meetings to the pausing of judicial proceedings to deal with laughter outbursts. I propose that all of these examples are telling of the intrinsic knowledge which typically developing people hold that laughter is symbolic of an experience of discordance. Laughter is therefore a reflection of imperfection and it can be interpreted as being a challenge to power, which is why it must be controlled.

As Professor Michael Billig stated in a podcast interview with me on the interrelated topics of laughter and ridicule (Duggan, 2015):

> The mistake is to think of laughter as a spontaneous or helpless reaction…to consider laughter as like a sneeze. A sneeze doesn't really have any rhetorical meaning. It's just something that comes out of the body. Laughter is a way of conveying messages. (Duggan, 2015)

Whether the 'meaning' of laughter intentionally conveys a message, or is inferred by the listener as conveying a message is dependent upon the context and those who are party to the laughter. However, the underlying notion that laughter is not benign in meaning is an important reminder that laughter holds symbolic importance. A challenging aspect of laughter is that the same episode of laughter can symbolise disrespect to one person and mirthful hilarity to another. This gap between intention and interpretation is a challenging one to negotiate. It is often only after consideration of the impact of laughter after the event that the true understanding of what laughter symbolised to the parties involved becomes apparent.

The ostracising of Marianne as a consequence of laughing at a funeral is indicative of the process of construction and maintenance of social laughter parameters by social actors, who behave as gatekeepers of laughter's contextual appropriateness parameters. Deviation from the norm can result in more than social embarrassment associated with being the only one laughing, it can also result in punishment. The example also serves to show how people can remain compliant to social laughter parameters, despite an apparent desire to laugh at events which have the potential to provoke laughter and by doing so, they help to preserve the socio-cultural values which contribute to the wider laughter configuration matrix.

An individual's concept of the appropriateness/inappropriateness of laughter is learned through social feedback. This can be learned through explicit instruction, as the Montessori child referred to earlier, who laughed during quiet time discovered. Alternatively, learning can be done through observation of the action and reaction of others in a social group and reflection of the impact of laughter. Whilst this form of learning doesn't come from explicit instruction, the impact upon the laugher is no less effective.

A selection of quotes below, taken from an available assortment of many similar ones, show just how vividly people become aware of the disapproval of others as they laugh at a time when the majority aren't laughing (each example below is referring to an unrelated event and is independent of the other).

These examples also show how vividly the majority of people make it clear to the person who is breaching the social laughter parameters (and hence, the powerful societal norms which configure it) that their laughter is not appropriate in that context. This is done through the joint action of refraining from laughter themselves and also, as is the case in each example below, by staring at the offending laugher:

1) A girl is about to start singing the national anthem. I put my hand over my heart and she starts. This girl starts squealing the national anthem. At first, I thought it was a joke and I burst out laughing. As I was expecting everyone else to. Suddenly, hundreds of angry, beading eyes start looking at me with disgust. I tried to control it, but it was horrible. (Anon 1 – Reddit)

2) I burst out laughing and couldn't stop for a good five minutes. All eyes were on me. I felt horrible. (Anon 2 – Reddit)

3) I burst out laughing. I was the only one. People stared. I still couldn't stop laughing. I went red from trying to hold it in. So awkward. (Anon 3 - Reddit)

In reply to the comment # 3 above, contributor # 4's comments (below) suggest that while the majority of others conformed to the prevailing social laughter parameters, they too were likely to have had the urge to laugh:

4) Everyone else was laughing on the inside. They just pretended to act all mature and fancy. (Anon 4 – Reddit)

Whilst it is not possible to verify if this reactive commentator's interpretation is correct, the implication is that the social laughter parameters, in terms of people's desire to portray a public image of maturity and sophistication, provided a sufficient force for restraint for the majority and a sufficient opportunity for learning by the deviant laugher.

The learning aspect of the process is evident in the emotional reaction which each of them had to the sombre reaction of the majority of people in that context – "*It was horrible", "So awkward".* The fact that these people are recounting their experiences in such a manner is evidence that the experience has remained with them. It has been incorporated in to their individual laughter range and they may be motivated to restrain laughter in similar contexts in the future.

Such attempts at restraint are however not guaranteed to work and while the examples above are recollections of people's self-reported 'most inappropriate laughter ever', those people are fortunate in that what they experienced were rare events for them. Some people are not so fortunate however and they describe themselves as being debilitated by their regular laughter (which they often describe as 'nervous laughter') at times which they recognise as being inappropriate.

Such laughter can be very challenging, as the laughter can occur in even the most mundane of situations. Much like with the laughter loop described above however, the nervous laughter can in itself be a powerful experience of discord, which feeds upon itself. In such cases, as with 1-4 above, the interpretations of others are central to how the laugher interprets their own laughter and it is to the topic of interpretations that attention is now drawn.

6.4.1.3. Interpretations

As was introduced earlier, interpretations are a fundamental property of people's understandings for the motivations and causes for laughter and these interpretations can have widely varying degrees of impact.

For example, one might expect that professional performers whose goal it is to elicit laughter in an audience would have similar interpretations around laughter. However, two interviews – one with a professional clown and one with a professional comic, portray just how much interpretations can vary:

> You have to pretend that you're delighted that you've had a success, doing a good show and making all those people laugh. You're setting yourself up for a very conflicted situation and I think I found that aspect very stressful. (Daniel – professional clown)

This quote is indicative of the contradictory feelings which Daniel holds about audience laughter. Whilst he recognised that audience laughter is expected and to an observer, such laughter would typically be considered to represent a successful show, he did not feel that way. Rather, he felt uncomfortable with the laughter. This contrasts with the opinions of Sam, a performer whose career also depends upon the laughter of a crowd:

> Any one of us that do it professionally [make people laugh] analyse what we do in great detail. So, none of us do what we do by accident, so we are completely in control. If it's going badly though...and they're looking at you with disdain, then you're looking at yourself and thinking what are you doing? It's about their intent. If I'm doing it to make them laugh, that's very empowering. (Sam)

The difference in the interpretations above rests in the level of control which the person who is being laughed at interprets himself as having in the situation. Sam went on to explain that he holds a perspective on audience laughter which differentiates forms of audience intent. For him, laughter is about control over the audience and when the audience laughs in response to his laughter provocations, he is empowered. However, when laughter occurs as a response to a poor show, or an error on his part, such laughter makes him question himself. Daniel on the other has found that he interprets all audience

reactions of laughter as somewhat threatening. Daniel has ceased performing, whilst Sam still performs and enjoys doing so.

As has already been established, laughter is not always reactive to an obvious stimulus such as with the audience laughter above. Laughter can be produced under volitional control. As such, there is certainly potential for laughter to occur when there is a desire to create an experience of discord, such as in a situation when a person is laughing to make others feel uncomfortable. This particular use of laughter is a mainstay of 'maniacal laughter' in movies, which is often used to build tension through the contrast between a seemingly dire situation and the behaviour of laughing, which is typically associated with positively valenced emotions (Arnzen, 1994; Honsco, 2012).

However, apart from its use as a cinematic device, ***standalone*** *intentional laughter designed to create discord* is not a form of laughter which emerged strongly in the current investigation. It is easier to spot laughter as a reaction to discordance than to surmise that laugher was emitted as a conscious tactic to create discord for another. Usually in such cases, the laughter is accompanied by another action, such as bullying, or aggression. Examples of discord being created unintentionally by laughter are extensive however and there is good reason, related to interpretations, as to why laughter creates discordance.

Indeed, from a practical research perspective, confirming the existence of such laughter proved difficult, despite a call through my dedicated Facebook 'laughter research' page for participants who might have used laughter in such a way by asking 'Have you ever intentionally laughed at someone for no reason other than to annoy/upset/ridicule them?' There is a high chance that impression management was a factor in preventing participants to come forward to discuss such a topic (Goffman, 1959; Kte'pi, 2016).

I propose that when people hear laughter, they don't necessarily understand it in terms of a 'positive signal' on an unconscious level, unless they are 'in on the joke'. With regards to the aforementioned laughter of ridicule, I propose that such laughter is a label which is applied to laughter which is hurtful or offensive *to the person who feels that they are being laughed at*. It is therefore an interpretation of the meaning of the overt behaviour of another, as opposed to a distinct laughter type. I propose that laughter of

ridicule does not hold a particular essence which differentiates it from other forms of laughter – it is the context of the interpretation of the intent of the laughter which is where the meaning exists.

It is conceivable for instance that even if a person is laughing while intentionally mocking another person that the laughter is their own way of negotiating the discord which they perceive in the target of their attention. The laughter itself is not a signal of ridicule per-se, it is a side effect of other behaviours informed by beliefs which may be where the true malice exists. These actions may be verbal, or may be exaggerated mimicking for instance. In keeping with the theme of the current thesis, the reason why laughter during such event hurts the target so much is because we each have an implicit knowledge that laughter is symbolic of discord – in cases of perceived ridicule, we discover that we are the one who is apparently displaying the discordant behaviour. Whether that interpretation is correct or not is a separate matter.

This is not to suggest that there are not any cases in which people solely laugh directly at another to intentionally ridicule them without accompanying behaviours, such as verbalising the discordance. Such laughter would be unusual however, and as the sole respondent who recognised himself as using laughter as a weapon, but only as a part of an arsenal of other behaviours put it, “Laughter on its own would just be bizarre” (Martin).

In summary, interpretations are at the very heart of which laughter is deemed appropriate and that which is deemed inappropriate, for it is only when the interpretation is applied to the laughter that the laughter’s symbolic meaning is revealed. With regards to perceived ridicule, it is often the laugher’s interpretations of an aspect of the target, or of the target’s actions, which presents a discordance to the laugher. When a person walks into a large street lamp and onlookers laugh, it is not necessarily because they are intending to ridicule, it is because they are reacting to an experience of discordance. This is not to suggest that ridicule does not exist – only that the laughter sometimes associated with ridicule is not hugely different to semi-reflexive laughter which does not hold such negative symbolic meaning.

Whilst the above discussion focused primarily upon social factors which tend to inhibit laughter, there are also social factors which promote the likelihood of laughter and these are explored below in terms of situational and interpersonal expectations.

6.5. Situational Expectations

As has already emerged in Chapter 3, incident based, or momentary violations of expectations are centrally important to the wider discussion of negotiating discordance with laughter. However, the focus of attention in the current section is with regards to *situational* expectations and these expectations can apply just as readily to goal-oriented laughter as to semi-reflexive laughter. These are broader than the violations of expectations attached to individual events, such as the implicit expectation described in **section 5.1.** that a canoe will not capsize.

The broader expectations discussed forthwith, map well on to the established concept of social scripts (Baddeley, Eysenck, & Anderson, 2009; Fiske, 1995). These types of expectations have the potential to enhance or inhibit the likelihood of laughter, as the individual situates him/herself within the prevailing context. The expectations referred to here are connected to predictions of *likely* patterns of behaviour which have been socially pre-established, as well as to understandings of environmental contexts in which laughter might either be expected to be a typical and appropriate behaviour (laughter enhancing contexts), or untypical and inappropriate behaviour (laughter inhibiting contexts), as the case may be. The use of the word *likely* is relevant, as it acknowledges that expectations can be inaccurate and an individual may misread a situation.

Additionally, expectations may well be accurate, but violated in the given circumstance. Laughter can occur, despite there being a social burden not to laugh (e.g. at a formal ceremony). Likewise, laughter can fail to occur in situations in which laughter is fully expected (e.g. a comedy movie which fails to deliver). As mentioned before, goal-oriented laughter can be produced at will, so it can easily violate any situational, or social expectations, but I propose that it is as likely to be inhibited or disinhibited in accordance with situational expectations as semi-reflexive laughter is.

A scenario in which the situational context is designed to play upon expectations in order maximise the likelihood of laughter is the comedy club setting:

> From the moment you make the decision...from the moment you buy your ticket and you walk up to the door and there's a sign that says

> comedy and you walk inside and there's a stage and there's a stereotypical backdrop and a lone microphone and the MC comes out and he's being funny from the moment he starts and you go, 'this [laughter] is what we're supposed to do'. (Sam)

In contrast to such laughter enhancing situational factors, there are also particular situations which present reduced expectations of laughter and hence, act as a force of inhibition upon an individual's potential for laughter. In such situations, activities which may not typically be associated with laughter are taking place and laughter is therefore less likely, unless permission to laugh is given by a laughter gatekeeper, who is typically someone in a position of authority or power.

An example of a gatekeeper who can override situational expectations (in either direction) would be a school teacher. A teacher is a figure of authority with the power to manipulate the aforementioned social parameters and consequently, situational expectations in a classroom:

> On a day to basis, that can be quite annoying [a class joker], if you're trying to teach and suddenly your class breaks down laughing at regular intervals because of the guy in the corner. It tends to be boys, who might have a lovely personality, but might not be getting the attention in other ways. Their classmates love them, but as a teacher, you can't really engage with them. At a certain stage, you have to have a line and eventually you have to say stop. (Noel)

Expectations regarding situational contexts are based upon wider representations of the world, which are often constructed on a societal level (Fiske, 1995). It is these schemata which inform the social laughter parameters referred to in **section 6.4.1.** (and consequently, the interpretations of what is deemed appropriate laughter). The individual laughter range of a person who is responsive to situational expectations, will have more freedom for gradual disinhibition within the guiding parameters of a laughter appropriate institutional setting, such as a laughter yoga club, where laughter is clearly expected to occur in this particular situation:

> I do like to tune in and see how people are experiencing everything, so there are points where you can hear and feel the change in the person, where they just start to crack up and it's real genuine laughter. (Suzanne – Laughter Yoga Instructor)

In contrast, inhibition may be more likely within the confines of what is implicitly understood to be a laughter inappropriate social situation:

> You know when you're on public transport and you laugh. I mean that's totally inappropriate to laugh, but then you're embarrassed. A child isn't, so we do limit it I suppose. It's definitely cultural and maybe even a class thing. It's like the queen, she won't belly laugh. I've been in social circumstances, when you know it's not appropriate to belly laugh, whereas children aren't aware of it. (Brigid – interview participant)

However, the laughter tendency of individuals who are not responsive to social situational expectations of 'acceptable' behaviour (such as the class joker), will not be as readily influenced in such a manner and they will often ignore social laughter parameters. Such people are often labelled as deviant, as they disturb the established social norms and the general consensus for what is expected in such a situation. This is not just the case in classrooms, as the thoughts of a psychotherapist who was interviewed portray:

> I think that if you don't play ball in the dominant cultural discourses of our time [with regards to laughing in certain situations], you are really fucked. So, deviant is grand, if you've got a strong sense of self, but if you don't, you're in trouble. (Barbara)

It is not the case however that there are two types of people – those who are rigidly compliant to situational expectations and those who aren't. While there are undoubtedly people who match those particular criteria, variations in personality traits will ensure that there is great variation in the reactivity to situational expectations and the extent of laughter's configuration within socially informed parameters.

6.6. Interpersonal Expectations

Not all laughter configuring expectations are connected to physical spaces and the socially scripted behaviour which is expected to occur within them. Many expectations are attached to people, including professional comics and everyday individuals alike. A suitable name which could be applied to this phenomenon of laughter expectations attaching to people is *the clownfish effect*. This name is inspired by the scene in the movie Finding Nemo (Stanton, 2003) when a group of fish ask the (decidedly non-humorous) Marlin character to tell them a joke on account of the fact that he is a clownfish.

The consequent extreme disappointment which prevails when he fails to live up to their expectations is telling of the kind of pressure which comedians must experience when their gags fail to deliver laughs. Fortunately, however, for the comedians who do build up a positive reputation, the expectation can enhance the likelihood of laughter:

> People who meet me [in public places], who have seen me on stage will laugh at the kind of comments that would normally barely elicit a smile, but they will laugh because they expect you to be funny, so they're kind of saying 'I expect you to be funny, so I'm going to laugh.' (Sam)

The clownfish effect is not unique to comedians however. Non-professional laughter provokers can also appear to be funnier than their peers as a consequence of a level of expectation which has been built around them. In such cases, they have fostered that expectation in others. They have in a manner, earned the right to make others laugh, through repeated attempts at laughter provocations. Eventually, when they have provoked laughter enough times, an expectation of funniness builds up and even their less humorous attempts may be likely to instigate laughter to a greater degree than a peer who has not yet earned the right to provoke laughter so readily.

This phenomenon of earning the right to make others laugh first emerged in conversation with a proprietor of a comedy club who is not a comedian, yet described himself as 'the funny one' in his circle of friends. He also pointed out the contrast between himself and a newer member of the group who often made attempts to make others laugh, but who

consistently failed, or got ‘sympathetic laughter’ rather than the ‘genuine laughter’ that he would get for a similar witticism or joke. He described how there was a lower threshold for him above which he could easily elicit laughter:

> This lowered threshold has to be earned. Not just in comedy, but in social groups. A new member in a group has to work harder to get a laugh. (Paul – Interview participant)

Likewise, he described how an established comedian will have earned the right to make others laugh more readily:

> A well-known comedian can walk on stage and say 'what's with that fire exit sign?' and get a laugh. A new comedian can have the best gag in the world and not get a laugh, because the audience have a lower expectation of funniness. (Paul)

Despite the situation that some people are seemingly talented at provoking laughter from others, this may not simply be because they are innately predisposed to being funny. Interpersonal expectations of funniness can be nurtured in other ways, as Edwards and Martin’s (2010) commentary on joke telling suggests:

> Some people frequently make others laugh by telling memorized jokes or often enjoy laughing at other people’s jokes, without having a high level of ability to create humor themselves. Others may be very skilled at creating highly original jokes and witty responses when asked to do so, but may not tend to use humor very much when confronted with stressful life situations or engage in much witty banter in their daily interactions with others. (2010, p. 198)

As such, this point by Edwards and Martin (2010) is suggestive of the notion that there are a variety of paths by which one can become adept at making others laugh and building an expectation around that. Whilst an element of creativity is certainly an aspect to the development of this skill, so is rote learning of other people’s jokes. Either way, it is possible to foster an expectation of laughter (or at least an expectations of laughter provocation attempts) in others.

Previous research also suggests that there are social advantages to fostering such expectations in others. From an evolutionary psychology perspective, these include

enhanced attractiveness to the opposite sex (Buss, 1988) and the development of a 'halo effect' associated with those who present as having a good sense of humour (Beins & O'Toole, 2010, p. 268). It must be stated however, that a good sense of humour is a multifaceted concept, which doesn't necessarily translate into a skilled humour creation ability, or an ability to provoke laughter, as Edwards and Martin point out in their examination of the relationship between mental health and humour creation ability (2010).

As is a common theme with laughter, whilst there are expectations associated with socially acceptable and unacceptable behaviour in particular settings and expectations attached to certain people, expectations alone are not the whole story. With regards to interpersonal laughter, it is not enough for an individual to simply regurgitate learned jokes, or regularly fire out random efforts at witticisms in the hope that they will earn a right to make others laugh.

It transpires that there is also an element of social sensitivity required. Dewitte and Verguts (2001) used a selectionist approach to explore why some people are considered to be funny and others are not. They discovered that people who not only try hard (they make regular attempts at laughter provocations), but who are sensitive to the reactions of their audience, can fine tune their funniness.

Interestingly, they discovered that there was a sweet point of sorts with regards to the emotional sensitivity of the laughter provoker. If the joker was on the lower end of sensitivity, then they were not deemed to be as funny. The same applied to being overly sensitive to other's appraisals. Essentially, those who are sensitive to positive appraisals tend to make more laughter provocation attempts, whereas those who are sensitive to negative appraisals are more likely to 'enhance joking quality', but may do it less often (Dewitte & Verguts, 2001, p. 49). The trick, it seems, is in finding the balance.

In terms of the current theory, I would liken this approach to a systematic culling of excessively or insufficiently emotionally stimulating laughter provocation attempts, in a manner which is similar to how a stand-up comedian might 'work the crowd'. This is combined with an intuitive altering of the level of emotional stimulation to a point which is comfortably within the laughter range of the audience. This is done by being sensitive

to the audience's reaction to laughter provocations – the audience in an interpersonal sense being those in the social circle.

Whilst consideration of the emotional state of the audience to the laughter was not an aspect of the Dewitte and Verguts study, it is possible that emotional states may act as a configuring situational factor, which would certainly be relevant to those seeking to hone their laughter provocation skills. Whilst the data is not available here, I would suggest that the skilled jokers referred to above are sensitive to the emotional states of their audience and that this is a consideration as they make laughter provocation attempts. This may be an interesting topic for further research, a point which is reiterated in later discussion in chapter 8.

This sensitivity referred to above is particularly relevant to the following section, in that emotional state has emerged as being of importance with regards to laughter, however this is perhaps not in the way in which emotionality might be expected to play apart.

6.7. Emotional State

> Sometimes I'd just be in such a goofy or giggly mood that I'd laugh at some of the silliest, most ridiculous things. Even things that no one else found funny. (Anon forum contributor – Google alerts)

Common sense tells us that there are times when one's transient emotional state alters one's tendency to laugh. Such a line of thinking would suggest that there would be times when one simply isn't in a good mood and that such a feeling translates into an inability to laugh, or conversely, that one is in such a good mood that laughter is abundant as a direct consequence.

However, as this is a grounded theory, it is incumbent upon the researcher to avoid logical elaboration and the forcing of data into description which suits preconceived notions. As Glaser (2011, p. 29) stated "When using GT forget what you are supposed to find and just see what you are finding."

Without a doubt, the notion that transient negative emotional states would inhibit one's ability to laugh, or transient positive states would enhance laughter was one which I firmly held, without being consciously aware of this preconception until I began to sort my memos on the topic. So powerful was the preconception that I had taken it as a given and felt that I could peruse my data at any stage to confirm the notion, thereby slotting it into the overall theory with ease – certainly not an approach espoused by experienced grounded theorist. Surprisingly to me, although perhaps not to an established expert in grounded theory, this preconceived notion failed to pattern out.

An example of such a preconception would be my initial belief that when groups of adult friends get together at a dinner party for instance, that laughter is plentiful because such positive events enhance positive mood, temporarily broaden individual laughter parameters and so help the laughter to flow. However, given the weight of the grounded data, I now propose that laughter is more likely because of the disinhibition caused by situational and interpersonal expectations which thereby enhance the likelihood of laughter, combined with other factors such as the disinhibitory power of alcohol (Choi et al., 2018) and increased opportunity for experiences of discord and laughter

provocations. Certainly, in addition to these factors, emotional state does have a relationship to laughter, but as the following discussion outlines, this role is not one of direct causation.

Prior to this realisation, in addition to a detailed examination of the data which I had gathered throughout the research, I also attempted to sample outside of the data bank which had been collected up to that point, specifically for the existence of such a transient mood influencing laughter effect. Across the large spectrum of data gathered, I failed to find a convincing pattern in the evidence that temporary states of negative valence prevented laughter from occurring. It did however emerge that laughter often occurred at times of great stress, or emotional arousal and this had the effect of shifting transient emotions from negative to positive valence. This was not a finding which had been expected.

During the memo sorting stage, it transpired that any thoughts I had on the concept where not grounded in data and were not appearing in my memos, but were directly related to ideas which I had held about my own personal experiences when I associated laughter (or lack of it) to mood states without consideration of the direction of causation.

Whilst evidence to suggest that transient negative valence prevents laughter was not forthcoming, what of evidence to suggest that transient positive valence leads to more laughter? The opening quotation in this section suggests that mood can increase the tendency to laugh, however, grounded theory uses the interchangeability of indicators to build concepts, and one or two indicators does not suggest a pattern.

However, what did pattern out was laughter occurring at times of great emotional arousal and this didn't need to be during what might be considered to be fun times. Descriptions of laughter at events such as funerals suggest an enhanced state of emotional lability due to the circumstances in which mourners find themselves, with just the smallest of unexpected factors having the potential to instigate laughter:

> At my great-grandmother's funeral. I tripped and nearly fell, and when I steadied myself, I blurted out "oh my gosh, I almost died!" My brother

> looked at me with really wide eyes and we both exploded into laughter. It was that inconvenient laughter that just got more and more intense each time we looked at each other. I had to leave the room to get myself together. (Anon contributor - Reddit)

In contrast to the lack of memos pointing towards positive mood enhancing or negative mood inhibiting laughter, below is a memo which I wrote after recognising a pattern of laughter in reports of funerals. This memo is indicative of what was a developing notion at that stage that laughter is more likely to shift transient mood than to react to it:

> It often occurs at funerals that people's eulogies are interspersed with laughter provocations. This provocation is an intentional emotional shifting device. It may be more complex than simply improving the mood of the mourners. It may also be related to a memory reconsolidation process. The effect of reducing the pain of an unpleasant experience through the use of laughter. This is the last formal opportunity to reframe the legacy of an individual in positive terms. By shifting the emotional state of the mourners while recalling the deceased person, an implicit link can be made between them and good times. Laughing about times gone past is a temporal and emotional shift of sorts. (Memo on laughter at funerals)

The heightened arousal caused by emotive events (be they positive or negative) seems to be the factor which enhances the likelihood for laughter, rather than there being a positive valance = more laughter, or negative valance = less laughter equation. When one considers less emotionally charged contexts, the extent of the experience of discord caused by similar stimuli which may have potential to instigate laughter, but fail to, may be entirely different.

For instance, clumsily dropping a ring from a dressing table may result in minimal discordance or may even go unnoticed in a conscious sense, whereas dropping a ring at a formal ceremony can lead to laughter (as evidenced in open source wedding videos online). A fumbled word may cause a little embarrassment in everyday conversation, yet a fumbled word at a wedding ceremony may result in seemingly uncontrollable bouts of laughter. Indeed, when the groom in a video (which was analysed for the current theory) states after fluffing his lines and laughing, “I’ve been scared of this all of my life”, the emotional arousal becomes very evident and the marriage officiator also comments as he waits patiently during the bride’s uncontrollable laughter “Don’t worry folks, I’ve seen

this before", a strong indication from someone who regularly attends such emotive events that it is not an uncommon occurrence.

Repeatedly, participants in the current research described how, despite their best efforts, they were unable to control themselves in emotionally charged circumstances similar to these. Furthermore, they described being physically unable to stop laughing in order to explain their behaviour or to excuse themselves. In positive circumstances, such as at weddings, this digression from the norm was not a major problem, with the congregation joining the laughter and only a few laughter gatekeepers, such as the officiator remaining serious. However, those at more solemn events regularly described how they were vividly aware at the time of laughing that their laughter was wholly unacceptable, due to the scornful looks, as described in **section 6.4.1.2. Inappropriateness**.

However, one other quotation arose, after the above arousal enhances laughter concept had formed, from a comedian regarding one of his favourite gags, which did point towards the notion that transient emotive states do influence laughter:

> What great comedy is, that sometimes people can't help themselves. That's why in a comedy club it works. Like the 20% or so who burst out laughing at the Brokeback Mountain gag. They couldn't help themselves. They're not sick, they're not nasty people. It's just a good line and they're probably the most relaxed people in the room anyway at that moment. I can't imagine people who are scared for example being very inclined to burst out laughing. (Sam)

Two important words in this quote are 'probably' and 'imagine'. I would suggest that Sam is guilty of the same preconceptions regarding emotional states as I was. Indeed, to the contrary, incidents of data did arise in which people who had been in car crashes, or near misses, proceeded to laugh:

- I had gotten in a car accident with my mother in law. She accidentally blew through an intersection. Luckily, she wasn't hurt and while I still can't figure out what I found funny, while she was standing outside the car looking at the damage, and me holding my head…I started laughing (Anon forum contributor – Google alerts)

- On the way to work this morning on the motorbike I was 'cut up' by an aggressive driver who then started gesticulating sign language messages to me - immediate response was to gesticulate back but I suddenly found myself giggling at these two strangers trading insults by sign language at 100 miles an hour on the M4. I don't know why my 'outrage and anger' turned to giggles. (Anon – Managed forum)

Whilst the urge was to return to the field again to find data which confirmed my preconceived notion, it was decided not to risk the forcing of the preconceived concept by carrying out interviews and asking participants potentially leading questions such as ‘can you remember a time when you were in a great mood and laughed as a result?’, or ‘can you remember a time when you were not in the mood to laugh?’ In retrospect, this decision was beneficial to the current theory, in that it allowed space for a truly emergent pattern to arise.

The quotation which opens the current section and which refers to goofiness and giggliness, was one of only two indicators which emerged that could be interpreted as evidence to suggest that when one is in a positively valenced state, laughter parameters are temporarily expanded. However, the quotation was taken from an online discussion titled ‘How to control my laughter?’, in which commentators discussed ‘problem’ laughter which was negatively affecting their lives. The same commentator as above also stated “This affected my job function a few times.” With this in mind, it becomes clear how, out of context, a single datum point can be used to represent one meaning when, in the reality of its true context, an alternative interpretation became available, that this ‘giggliness’ was unusual and was bringing suffering.

In summary, the presence of potential laughter provoking incidents, opportunities for which are multiplied when in social settings, interacting with social scripts, interpersonal and situational expectations (each of which were discussed earlier in this chapter) have consistently emerged as being more salient as regards the likelihood of laughter occurring (or being inhibited) than transient emotional state has. It appears that rather than emotional state being the primary conductor of laughter, that the implicit expectation that ‘this is/this isn’t an appropriate time to laugh’ is more likely to be of influence and it is a general state of arousal which enhances the strength of the laughter disinhibiting aspects of the above factors.

Finally, despite the above references to the advantages of trusting in the grounded theory method, it remains possible that there may well be methodological issues which are behind the lack of evidence to support the notion of transient emotional valence having a directional effect. These issues are discussed in more detail in **section 8.2. Reflections and Limitations**. However, even considering the potential for a methodological oversight leading to a lack of discovery regarding transient emotional states leading to or preventing laughter, there is great grounded strength in the assertion that when laughter occurs, it shifts psychological states and it is to that topic that chapter 7 now turns.

7. Negotiating discordance with laughter

Introduction

The core concept of the current theory, to which all other concepts relate is that of laughter negotiating discord. Laughter signifies the processing of experiences of discord, which typically leads to the shifting of states – sometimes cognitive, sometimes emotional and sometimes an amalgamation. This notion offers a path to understanding the act of laughing which moves beyond focusing solely upon the apparent causes of laughter and configuring factors and which ventures into a broader examination which also incorporates the consequences, or impact of laughter – that is, the variety of ways in which laughter contributes to the negotiation of the experience of discord which instigated it in the first place.

Whilst this is the final stage in the laughter process, from the perspective of the current theory presentation, it is a component in a tri-part process which began in the chapter 5, with the experience of discord, continued through chapter 6, with the detailed examination of the configuring processes and draws to a close in the current chapter with consideration of the impact of laughter. One such impact of laughter is an experience of joy, or mirth. This joy can be long lasting, as the following recollection of a 30-year-old laughter experience portrays:

> One time we actually had to get up and leave. We came outside the church and we were thinking 'why were we laughing?' I would often think back to that and it makes me joyful to think back to that, thirty odd years ago and I can feel myself going to laugh, because of what happened. (Bernadette – Interview participant)

Hurley et al (2011) stated in their excellent exploration of the intricacies and workings of humour “Basic humor happens when you get a jolt of mirth because a belief that you, yourself, are committed to – without realizing it – becomes invalidated” (Hurley et al., 2011, p. 131). Whilst they are referring to mirth in this regard and don’t explicitly specify laughter, I propose that the same process is taking place when laughter occurs. Indeed, the *emotional overflow effect* with laughter may be even stronger than with mirth alone, which can occur without laughter.

That which I refer to as the emotional overflow effect is a consequence of the emotional state shifting properties of laughter. Laughter contributes to emotional shifts from a state of discord. However, the effect is not so fine-tuned as to reliably and precisely balance emotional states to a state of equanimity. The consequence is that the emotional shift caused by laughter can lead to a subjective pleasurable feeling. This pleasurable feeling is the overflow from discord, beyond homeostasis, to a subjective state of mirth, or joy. Indeed, beyond laughter shifting one's state to a state of equanimity, it has been suggested that laughter "may ameliorate pain, alleviate stress, and promote functioning of the immune system" Panksepp (2000, p. 185). Furthermore, Panksepp suggests that:

> Some of these effects could be due to the release of endogenous opioids (natural, morphine like pain-control systems) in brain systems that are known to be important in mediating social emotions, such as playfulness and social "warmth" (Panksepp, 2000, p. 185)

As laughter is a vivid marker that discord has been experienced (or, in Hurley et al's terms - belief invalidated), then a shift to some degree in a cognitive or emotional state (or combination of both) is an inevitable consequence of the laughter process.

This shifting state may be a pleasant change in an emotional experience, akin to the sense of mirth which Hurley et al describe (2011). Conversely, it may be a laughter provoked discord, such as an unpleasant shift related to embarrassment, ridicule or a sense of being judged, as was explored earlier. This shift may also be a new conceptualisation of a previously held, but now revised understanding, when laughter marks an invalidation of a previously held belief. An important point is that the shifting states to which such laughter contributes is not necessarily confined to the person doing the laughing. The nature of laughter as a palpable behaviour permits a transmission of meaning to others (or rather, meaning is inferred). The consequences of this meaning can vary broadly from a shared experience of joy to a vicious act of derision.

Indeed, laughter's state shifting properties are not confined only to direct reactions to the experience of primary discord by the laugher. As was mentioned in chapter 5, the influence of laughter can extend into the social world and as a consequence, laughter can serve the purpose of negotiating two experiences of discord at once – the primary

discord which instigates the laughter and a secondary discord which is co-occurring. Laughter's state shifting properties can offer opportunities in this regard. These opportunities are available to all, but particularly to those who understand laughter in a manner which allows them to seize the opportunity which laughter can offer in contributing to the negotiation of secondary discord.

For instance, as was mentioned in earlier, in her assessment of the pedagogical value of laughter, Stengel (2014) recognises the moments after laughter as presenting an opportunity for learning, given that laughter is "a marker of disruption and discomfort" and that "an uncomfortable moment of experiential interruption made tolerable by the cushion of laughter is a moment of potential growth" (Stengel, 2014, p. 201). Indeed, following from my point above that meaning can be transmitted and inferred through laughter, Stengel recollects a time from her childhood when her teachers failed to understand her co-laughter with her friend in mathematics lessons as a vivid marker that they were experiencing trouble understanding. The proposition in her paper is that rather than punish children for laughing in class (their experience of primary discord), educators could and should seize such moments as opportunities to recognise students in difficulty (secondary discord) and to support them in their path to negotiation of difficult concepts which the laughter had flagged.

As a school principal put it to me when extoling the benefits of laughter:

> I love to hear the laughter coming out of the junior infant's class. It's fantastic. Right up to second class, a lot of what they do is learning through play. (Noel – Interview participant)

Benefits of laughter are clear in a schooling setting, which was Stengel's main area of focus. However, there are also implications for recognising laughter as offering opportunity for negotiating discord in other settings, such as in the emotional laden area of therapy:

> I'm interested immediately if I see that flag [laughter] recurring and I would park that there to return to it, or I would openly interpret it. 'You seem to laugh all the time when you mention your father. Was he a funny bloke?' And they'd go, 'No, he was anything but a funny bloke.' I'd say 'Excellent, tell me more about that.' (Samantha – counsellor)

The part which laughter plays in this and various other forms of shifting states is explored in more detail throughout the remainder of the current chapter. As a means to expand upon the notion of laughter negotiating discord, I wish to return briefly to a discussion of laughter in the early years. This discussion further develops the proposals laid out in section **6.3**, which introduced how laughter is first experienced and promoted. The goal of the current chapter is to focus upon the state shifting properties of laughter and the following section begins that process by exploring the earliest experiences of laughter and my proposition that such early laughter is harnessed as a means to self-soothe, the first signs of emotional buffering.

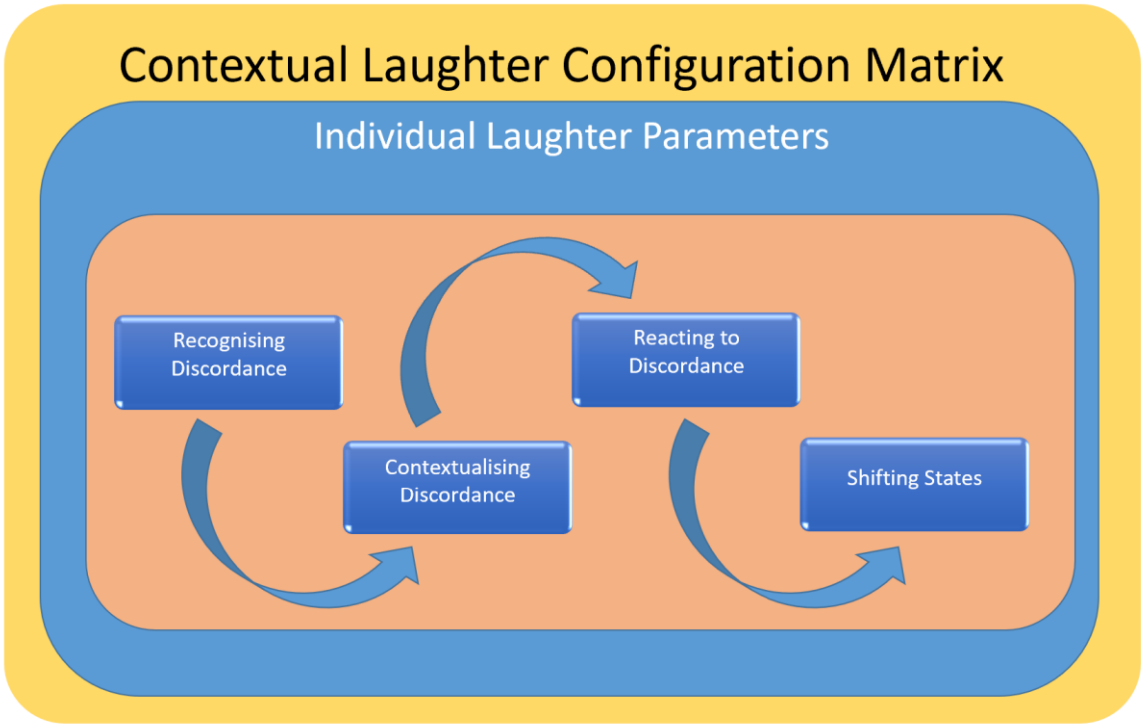
7.1.1.1. Negotiating Discord through shifting states

This grounded theory has uncovered several stages in the process of laughter negotiating discord, which can be reflected in the following four points. These stages may influence the outcome to varying degrees, depending to a large extent upon the context in which the laughter has potential to occur. These stages are:

1) Experiencing Discordance (Chapter 5)
2) Contextualising Discordance (Chapter 6)
3) Reacting to Discordance (Chapters 5 & 6)
4) Negotiating Discord through shifting states (Current chapter 7)

Whilst the passage through these stages can be linear, it can be confounded by more compelling evaluations of the point of discord, thereby interrupting any implicit processes, cognitive or otherwise, which could be interpreted as 'this is a laughing matter.' These alternative evaluations can disturb the process of discord negotiation and rapidly redirect the path away from laughter and towards other behaviours, which may be more situationally appropriate. Depending upon the nature of the discordant stimulus which has presented or is imagined, these alternative behaviours may require an aggressive stance, or perhaps a fear response, amongst any other myriad of potential reactions. Figure 11 below offers a visual representation of the process in action.

Figure 9: Laughter Process



Note that the third stage above is a point of potential divergence. From that stage onwards, this theory focuses upon shifting states which occur in conjunction *with laughter*. Whilst the many alternatives reactions to discordance are potentially of great importance to the individual, they are not the subject of the current investigation and as such, the subsequent use of the term 'shifting states' in point 4 and throughout the remainder of the thesis refers to events which occur as part of a process which includes laughter.

7.2. Laughter negotiates discordance

The final major concept which integrates with the notion that laughter negotiates discord is the recognition that laughter is more than a social signal that a joke is funny – laughter is indicative of a process of shifting states across several potential domains, a point which has emerged not only in my own research, but also in extant literature:

> Laughter – and all laughter – breaks through to mark a range of emotional states: fear, nervousness, shame, confusion and others not viewed as positive, as well as joy, delight, interest, relief and other states that are viewed as positive (Stengel, 2014, p. 200)

Laughter interacts with a broad range of emotional and cognitive factors, some of which are listed above by Stengel (2014). I agree with Stengel's assertion in her paper that laughter is a marker of an opportunity for change. While her main focus is that it is in the moments after the laughter that an opportunity arises for formal learning, she also considers the precursors to laughter. What she calls 'breakdown of experience' (Stengel, 2014), I call 'experience of discord'.

The current thesis carries this notion into laughter in general, across any and all situations in which it occurs and while recognising discord in a student is certainly one opportunity which arises at the time of laughter, there are a variety of other arenas in which laughter has emerged as playing a role and many of these are explored in the current theory.

Whilst it is not possible to explore all potentials for laughter's occurrence, expression and influence in the current research, it is the goal of the theory to offer a means by which to understand the processes which contribute to these factors. The negotiation of discord is the final stage in the laughter process, which is explored throughout the remainder of this chapter, beginning in the following section with the means by which we learn to implement laughter as a self-soothing strategy.

7.2.1. Learning to Self-Soothe

Returning to my observation of the first laughter in infancy in section **6.3**, specifically with reference to the attempt of the adults to prolong the laughter event, this behaviour draws attention to the fact that this first laughter is part of an important interaction. The infant, as laugher, plays a crucial role, but so too do the adult laughter provokers. Their role in the interaction is purposeful and the pleasurable tones of an infant's giggles help to maintain their attention for the task at hand. Certainly, this experience could be thought of in terms of a bonding opportunity and I would not dispute that an enhanced feeling of closeness occurs, nor that such bonding is immensely beneficial, in the general sense described by de Cock et al. (2017).

However, I would like to propose an alternative function to this interaction, which is occurring at an implicit level and which I believe is overlooked in the literature, which tends to consider laughter as a signal of joy. The first laughter event is a learning experience which represents more than a bonding practice and more than the development of a 'sense of humour'. The infant is being taught the fundamentals of a form of self-soothing, which is novel to her. Specifically, she is being taught that laughter is an alternative to crying in response to certain experiences of discord which occur throughout life.

She is being given the opportunity to begin an ongoing learning experience, in which she discovers, through practice, what level of discord she can negotiate with laughter, versus which discordances extend beyond the effectiveness of laughter and require an alternative approach. Since the infant does not yet have the benefit of speech, with which to verbalise what is troubling her, nor does she have the developmental capacity to solve the majority of her own problems, the alternative approach at this age is most commonly crying – a powerful 'survival function' which helps the dependent infant to maintain the attention of the caregiver(s) and thus keep them in close proximity (Gillibrand et al., 2011).

laughter takes several months to emerge, unlike crying, which can occur from the moment an infant is born (Provine, 2000). Any parent will vouch for the efficacy of an infant's crying in drawing their attention to their infant. The crying indicates an urgent

need. Few parents would describe their child's crying as pleasurable. Neither would they be likely to describe the related emotions as pleasing, yet many (but not all) caregivers are very responsive to infants when they cry. Such responsiveness has been correlated with positive and secure attachment, (Leerkes & Siepak, 2006), which makes survival sense form an evolutionary perspective.

There are, however, differences with regards to caregiver's responses to crying (Bartlett & McMahon, 2016). I suggest that differences in attention also exists with regards parental reactions to laughter. Some caregivers respond to infant crying through "self-focused distress reactions such as anger or frustration, focus on relieving the caregivers unpleasant emotional arousal, potentially leading to ignoring infant cues through withdrawal, avoidance or hostility" (Bartlett & McMahon, 2016, p. 198).

Crying is jarring in order to get and maintain the attention of the caregiver until the disruption, or discord, which the infant is experiencing (fear for instance) is resolved at best, or lessened, at least. Whilst the cry of an infant is a potent tool for survival across the mammalian species (Panksepp & Biven, 2012), there comes a time for human infants, who are dependent for many years, when developing the skills of an additional discord management tool is highly beneficial.

I propose that laughter as a means to negotiate experiences of discord gives the infant a rudimentary taste of independence from the constant need for the soothing intervention of caregivers. Like crying, laughter also draws and maintains the attention of caregivers, but given that we have learned to associate laughter with feelings of joy and contentment, it lacks the level of urgency which is indicative of more serious discord. As one mother put it to me, when I asked her 'What draws your attention to your baby more quickly, laughing or crying?' she responded with:

> I reckon that any parent who hears their baby chuckling away to himself in a cot, is going to be comfortable enough leaving the baby on their own for another while, while they get around to catching up with housework. You know they're safe. Two minutes later, the baby might be screaming his head off and you've no choice then but to drop everything and go see what's wrong, so yeah – crying grabs your attention more. (Simone – parent of three, Manged Forum participant and follow up Interview participant)

Hence, the development of laughter does not hold the same adaptive urgency as crying. As the infant develops, and needs change, so long as security is in place, laughter allows the infant to take primary steps towards independence of emotional regulation. Laying in the cot, she may be stimulated to chuckle, rather than cry as a result of the erratic movements of her overhead mobile. She has now learned that not everything is so frightening as to require the response of crying. She has learned to self-soothe through laughter.

This ability to self-soothe using laughter is one which is carried forward by each typically developing child to varying degrees of success. As with any developing skill, the first experience is but an introduction to a burgeoning ability which may, due to varying potential life paths lead to mastery by some, occasional use by others and a neglected opportunity by others. For those individuals who develop a sense for the use of laughter, comes the opportunity in the future to use laughter as a means to negotiate a range of circumstances, including the negotiation of more challenging emotional circumstances. It is the negotiation of challenging emotions through the application of laughter which is the topic of the following section.

7.2.2. Challenging Emotions

As mentioned above, the refinement of the use of laughter to negotiate discord does not cease with the early discovery of laughter as a self-soothing mechanism. The notion of laughter serving the purpose of negotiating a range of discordances throughout the lifespan has already been introduced in a general sense. However, given that laughter is often understood to be an expression of joy (Panksepp & Burgdorf, 2003), the behaviour can seem to be distinctly out of place when it occurs at times when the emotions, or circumstances being negotiated appear to be negatively valenced to an onlooker.

The phrase 'It was no laughing matter' is one which can often accompany retrospective analysis of laughter under such circumstances. In the context of this grounded theory, the use of this phrase speaks to a bias in perceptions of laughter's predominant role as being an expression of mirth, a bias which this theory hopes to introduce some balance to by drawing attention to the ambiguity of laughter in certain situations and to the evidence which suggests that often times laughter is indicative of the processing and shifting of challenging emotions. Perhaps such situations are indeed a laughing matter, despite the apparent predisposition to relate laughter to mirth. Laughter is not always related to mirth and in reality, not all problems which one encounters in life are fixable, or at least, they may not seem to the individual to be fixable:

> I think laughing is an evolutionary thing. I have an image of two cavemen standing there looking at each other, with a huge shadow behind them and they only have one arrow and they know that this isn't going to end well. Life can be too big. There isn't a psychological skill in life some times that can cope with it, with the huge pile of shite that's in front of you, so I guess that laughing is sometimes about sitting down and being with the shite. (Samantha – Psychotherapist. Interview Participant)

In line with my earlier assertion that the word laughter is a term which encompasses a broad range of behaviours, it has emerged that whilst there are some laughter behaviours which appear related to positively valenced situations, there are also some which co-occur alongside situations which could reasonably be considered to be uncomfortable, or perhaps even distressing to the person who is laughing.

Laughter at a funeral is perhaps the most obvious manifestation of such laughter and this topic already arose in terms of the earlier consideration of the role of emotional state in configuring laughter. However, many more examples of people laughing at distressing times emerged in the course of this study, including one person who reported laughing uncharacteristically during the viewing of a graphic video of an abortion procedure.

> We had to watch a video of an abortion…I started dying with laughter. Everyone else felt really bad, but I just lost it and couldn't stop laughing. (Anon contributor – Yahoo Answers)

Despite such an extreme example as this, in reality, there is often no cutting point which allows one to unequivocally label laughter as that of distress, rather than laughter of joy. As was introduced in the discussion of the flexibility of the zone of potential laughter activation, the influence of context may lead to an individual finding themselves somewhat surprised by what they have laughed at.

As explored earlier, situational context is hugely important in enhancing, or reducing the likelihood of laughter occurring, even in response to experiences of extreme discord and people can traverse the invisible lines between distress and joy without even being conscious of the psychological processes occurring. Consider a comedy gig during which a gag pushes the audiences' limits of acceptability, yet some people laugh - while other people boo:

> People love if you break through the boo and turn it around. If you break through that norm…that social acceptance. The vast majority of people probably thought it was funny and didn't want to boo. They're not going to fight my battle for me, but when I say 'fuck you and your boo', they cheer for me and they say to themselves, 'ah, we were right'. The tension again. Even the booers laugh then. (Sam)

From the above example, and as is a recurring theme throughout the current study, it can be seen that excessive discomfort may, for some, require an alternative means to negotiating discordance to that which laughter can offer them at that time. In the particular setting above, the alternative to laughter for some people was to boo (the

discordance exceeded the parameters of their ILR), whilst for other people, laughter was an option (the discordance fell within their ILR).

The context of a comedy club setting allows for a certain freedom to laugh at distressing topics and this is perhaps why only a portion of the audience was motivated to boo in this example. The comedy club holds a very particular set of institutional parameters which are broader than they would be in a typical setting, such as in a workplace, where the institutional parameters would be a good deal more contracted and a broader disapproval of 'socially unacceptable' laughter provocations would be expected to occur.

As was introduced in **section 6.5 Situational Expectations**, the broadened social laughter parameters of a comedy club exist by design and they allow attendees at the venue the opportunity to laugh (in keeping with the transitory context) at discord which may typically fall outside of their individual laughter range. Consequently, attendees can securely explore the rollercoaster of challenging emotions, safe in the knowledge that the overall goal is to shift back from an experience of emotional discord to a point of laughter fuelled mirthful pleasure, which is for most people the point of comedy clubs.

Sam, the comedian quoted above, explained how he, through his conscious manipulations of the crowd, has 'turned boos around' on several occasions, thereby helping laughter to emerge when it seemed the crowd had 'turned against him'. From a theoretical perspective, the practise is recognisable as an emotional buffering process, which involves manipulating the audience's emotions to a highly stimulated state and then giving them permission to laugh at something they wouldn't typically laugh at by saying "Fuck you and your boo."

This situation gives an example of laughter negotiating challenging emotions in a relatively controlled and somewhat artificial environment which involves humour. However, as laughter is a day to day occurrence, which doesn't always rely on humour to elicit it, I wish to present an example of laughter occurring in challenging circumstances which does not involve any perceivable humour. To do so I provide an analysis of a public domain YouTube video in which an adult and child (presumably father and son) play a 'game' of taking turns to slap each other in the face with increasing ferocity.

Certainly, as the commentary from viewers of the video attests - from an observer's perspective, there is nothing 'funny' about it, despite the adult in the video, the observer who was recording the video, and the child in the video laughing numerous times throughout the recording. What transpired as being evident from this particular incident was:

A) Despite the presence of laughter, the slapping gave the appearance of being painful and thereby discordant with a state of equanimity.
B) Based upon the reactions of commentators, the behaviour was discordant with what many people would recognise as typical or acceptable. It was not considered to be a laughing matter:

> The slapping video was not funny at all…
> (Anon commentator – YouTube)

> Idiot slapping a boy for fun is not funny today he slap you tomorrow he will slap other thinking it's funny. So, stop doing this nonsense
> (Anon commentator – YouTube)

C) Despite the above points, laughing did occur regularly (at least 21 separate laughter utterances in a 113 second video recording timespan).

What is of particular interest in this scene is that the first 20 seconds of video, in which 15 facial slaps take place, there is no laughter. It is the observer who is doing the recording, rather than the adult or child in the recording who laughs first, on the 16th slap. This particular slap was carried out by the child and it was particularly heavy-handed. The child can be seen reacting to the observer's laughter by immediately looking towards the laugher in Figure 12 below and the man can be seen holding his face.

The child then proceeds to laugh for the first time. It is as though he has just been given permission to laugh at this highly discordant behaviour. This point is relevant, in terms of teaching the child through example the notion of laughter as a means to negotiate

discordance. It also teaches the child (rightly or wrongly in this case) that laughter can be applied to the negotiation of discord across contexts which are not necessarily joyous.

Figure 10: Video Screenshot

Rather than presuming that the laughter in the video is indicative of joy, one must accept that it is not possible to be sure of the emotional state of either party in the video. It is of course possible that, to them, the behaviour is typical, fun and enhancing of their bond, in which case their laughter may well be mirthful and joyous. However, given the numerous occasions which arose in the current study's dataset during which laughter was evident, despite little to nothing in the context being apparent as positively valenced, it is also possible (and highly likely) that these incidents of laughter in the video were not indicative of mirth or joy.

Given these diverging possibilities, one pattern which is unequivocally evident in this action scene is that laughter is occurring in conjunction with physical discomfort and a rather unusual psychological context, which a large number of observers found uncomfortable to watch and as such, it is fair to surmise was discordant with typical behaviour.

By considering this particular piece of data in the context of the overall patterns which have emerged from the collective grounded data, I theorise that the laughter occurring in this situation is helping to negotiate the challenging emotions attached to the discordant behaviour/situation. However, I cannot confidently apply (nor do I need to apply) a label to the form of laughter which is occurring.

As discussed previously, by applying labels, one runs the risk of applying inaccurate tags or laughter typologies, which may in turn colour one's understanding of events in a particular action scene. As was discussed earlier in terms of the appropriateness of laughter, interpretations are a fundamental property of people's understandings of the motivations and causes for other people's laughter, and this is particularly true when it comes to the negotiation of difficult emotions with laughter.

Indeed, a word which is loaded with powerful negative undertones and is often applied to laughter in challenging emotional situation is 'denial'. The following section is an exploration of whether or not the use of the word denial is justified when considering laughter in the context of negotiating particularly challenging emotions, or if the possibility that laughter is negotiating discord through the buffering of challenging emotions means that the use of the word denial is sometimes inaccurately applied.

7.2.2.1. Buffering – Denial or Distraction?

The psychoanalytic concept of *denial* (Freud & Baines, 1968) has what Glaser would describe as 'grab' (Glaser, 1998), in that the concept is easy to embrace and is catchy. This grab has perhaps contributed to the concept's assimilation from psychodynamic theory into everyday discourse. The act of denial of a psychologically troubling challenge has been described in theory as a childish, or immature defense mechanism (Freud & Baines, 1968; Weinberger, 1998). Not surprisingly therefore, in common discourse and in the context of the application of the word denial to laughter, the term can carry negative connotations which could be interpreted to imply that an individual who is perceived as being 'in denial' when they laugh is lacking an appropriate level of awareness regarding the true gravity of a given situation.

The following section seeks to explore negative connotations surrounding laughter which occurs in negatively valenced situations and the implications for misunderstanding laughter in such situations. The first point of consideration is that whilst there are situational differences between laughter which occurs in conjunction with positively valenced stimuli, versus laughter which occurs in contexts which might be considered to be distressing, such as laughter in a therapy session, there are fundamental similarities between the laughter in both circumstances. The primary similarity being a comparable overt behaviour which one could typically recognise as laughter and the secondary similarity being the aforementioned negotiation of discordance. It appears that the greatest difference between positively valenced and negatively valenced circumstances for laughter is the degree of discord which the laughter is being employed to negotiate.

Laughter which occurs in the latter context is often interpreted in terms which suggest that it is a less authentic form of laughter and that it is merely a 'cover' for an underlying experience of emotional pain. This difference in interpretation is understandable given the vivid situational disparity between the two. After all, shared laughter at a friend's joke certainly seems to be more 'positive' than a client in a therapeutic setting laughing when discussing abuse:

> When a client uses it [laughter] now in front of me, I say that's OK. That's the way they do it, but I can see around that and I'll say, isn't it interesting that they bring it in now. So, I can make an interpretation on it and if it's used by a client in a particular spot, I'd take note of it and I'd return to it. I'd say 'I'm interested in how, when every time it is that you come to talk about your father that you always laugh…Was he a funny bloke?' And they'd go, 'No, he was anything but a funny bloke.' (Samantha – Psychotherapist. Interview Participant)

As a trained therapist, Samantha has learned from multiple experiences that the use of laughter in such a manner is not simply a response to a humorous situation, nor is it simply a case of denial. The laughter is a marker. Furthermore, labelling such laughter as a cover devalues the role which such laughter plays. It is the role of a therapist to make interpretations and choose appropriate therapeutic actions in such cases.

In contrast to laughter often being labelled as denial, the use of humour is discussed in psychoanalytic terms as a high adaptive mature defence mechanism (Metzger, 2014). However, the distinction has already been drawn between laughter and humour in the current theory. The two are not the same and whilst both often occur in tandem, neither is necessary to the other. It is unlikely however, that in everyday discourse such distinctions between laughter and humour and between immature and mature defence mechanisms are made.

A person who laughs in response to a discord which is interpreted by onlookers as 'not being a laughing matter', can quite readily be labelled as being 'in denial' without much analytic thought. However, the current theory proposes that the use of laughter as a strategy for dealing with emotional discord is not necessarily a confirmation that a person is in some way lacking the maturity or awareness to face up to a challenge. To the contrary, gathered data suggests that many people are vividly aware that they use laughter to negotiate challenging emotions and they embrace that fact. Below is one such example, in which an individual states how she benefits from harnessing laughter:

> There are days when I don't laugh and I feel like hell! When I'm happy and laughing and having a blast, my life seems to flow better and I feel 100% better too! (Anon contributor – Yahoo Answers)

It is entirely possible that laughter which is labelled as being a denial by an onlooker is actually working well as an emotional buffer for the laughing individual and she may not be suffering any negative consequences from the application of his laughter as a means to negotiate the discord. To the contrary, the laugher may successfully and efficiently negotiate her way around the discordance which faces her, by avoiding it, or by diffusing its emotional abrasiveness. Sometimes the best way to negotiate an obstacle is to go around it, rather than through it. This negotiation of the discord need not necessarily be a solution to the discord. Rather, the concept of negotiation allows room for alternative outcomes, such as distraction from discord by laughing and moving on to another matter (some may label this denial), or diffusion of the extent of the discord, by reducing the extent of its seriousness.

An interview with a pair of entrepreneurs with regards to their humorous apparel brand 'Life is Crap'©, which parodies a U.S. brand of clothing known as 'Life is Good'©, offered several examples of people indirectly challenging the notion of laughter as denial through the act of laughing in spite of challenging life circumstances.

Whilst many of their t-shirts portray comical fictional situations, many also portray real life, relatable situations, such as a man changing a baby's nappy, with an overloaded bin next to him radiating foul odours and of course, the tag-line 'Life is Crap'. The reason the owners of this organisation were approached as participants for interview was because of their company motto 'Laughter is the cure', which Anthony explained:

> I believe in the motto, 'crap happens & laughter is the cure'. Whatever your issue is in life - get over it and move on. That was the idea. Some people let things get them down, and other people think - 'It's crappy' for five minutes, then laugh about it and move on. As time went on, something very interesting happened and we found that the motto really was, for some people, very therapeutic. It even became a mechanism for grieving. (Anthony – Interview Participant)

An example of the sentiment being put into action was a couple in their mid-seventies, standing with party hats and streamers, next to gravestone in a cemetery. They were wearing t-shirts with pictures of empty beer bottles on them that said 'Out of Bud, Life is Crap':

> The name on the headstone was Bud. It was their brother. They were having a birthday celebration for their dead brother at his graveside. Life is crap, but they were having a party. Some people might say that it's disrespectful, standing at the graveside laughing like that. It's not for everybody, but for them, that's their way, psychologically, to deal with their grief. (Anthony – Interview participant)

Whether the means by which an individual is handling their challenging experience is labelled as denial or distraction is a challenging matter of interpretation. Indeed, a comprehensive examination of the differences between coping strategies and defense mechanisms by Cramer (1998, p. 921) proposes that "Coping mechanisms involve a conscious, purposeful effort, while defense mechanisms are processes that occur without conscious awareness."

A fundamental point of discussion in Cramer's paper is the divergence in professional agreement as to which behaviours constitute a defence and which constitute a means of coping. Given that academic and clinical experts in the field experience difficulty in finding clarity on this issue, how might the untrained layperson be expected to make accurate interpretations of the underlying therapeutic value of an individual's laughter?

Based upon the data gathered in this grounded theory, there is little doubt that a certain amount of distraction through laughter can be a beneficial experience. I propose that the process by which laughter offers a distraction from minor, non-threatening discordance is by temporal adjustment. In other words, laughter draws one into the present, distracting consciousness from future and past thinking:

> Probably the reason I laugh so much is that I like laughing. I like being in a funny place and I like looking at things that are funny and I like things that are pleasant. I probably use that as a massive distraction from the real world. I often felt that if I ever opened the door on just how miserable the world can be, I'd probably just be crushed. (Sam)

Laughter plays a role in helping to situate people in the present moment in a manner which is reminiscent of aspects of the therapeutic, lifestyle and philosophical approach of mindfulness, which has its origins in Buddhist meditation practices (Murphy, 2016). Indeed, it was the comments of a psychotherapist and mindfulness practitioner which

first alerted me to the concept of laughter operating as a means to draw one into the present moment:

> I was going to a retreat to find peace and I was in a rush to get there. I was driving across the west of Ireland on narrow roads and I got stuck behind a big tractor with a slurry tank on the back of it and shite streaming out. I was stuck behind with the smell, getting all stressed out and angry with all farmers, going 'feck, feck, feck.' Then I realised that I teach mindfulness and here I am getting stressed over this, so I burst out laughing in the car and I eased of the pedal and realised the smell of shite wasn't that bad…To me laughter rocks in terms of finding a space to take a step back from the hard, cold face of reality. (Samantha)

The following comments from a professional laughter provoker, provide a further colourful explanation of the concept with regards to the perspective of laughter's influence:

> In that moment, when you're laughing in that comedy club, you're not thinking about your mortgage, your husband, your kids, your bills, your job. In that moment, you are just laughing and it's a massively pleasurable feeling. Laughter is the moment of orgasm, because when you're having an orgasm, you're not thinking 'Oh my God, I forgot to pay the gas bill!' (Sam)

The point of the current section is not to suggest that using laughter as either a distraction or an outright denial is a solution to all of life's psychological challenges. Rather, laughter may well offer little more than a means to buy time in difficult circumstances as one eases oneself in to the acceptance that an unavoidable point of discord must be dealt with. This point is emphasised by Andrea's commentary below, which is in reference to her involvement in counselling couples who are experiencing marital discord:

> Sometimes when a couple come in, just in the initial stage, he might say 'She wanted me to come' and the men do laugh. It's a kind of black humour...it's not funny, but it's a way...they can't deal with it and they're afraid. It's a defence. (Andrea – Marriage Counsellor)

As mentioned earlier, laughter does not have to be a solution to discord. Perhaps negotiating such a challenging discord through distraction is enough to expect of laughter at certain times, as one seeks to protect oneself from that which one seeks to avoid.

In line with the concept of the ILR, the point at which laughter ceases to be an effective tool for dealing with a given discordance is likely to differ for each individual. When an onlooker has interpreted an event as not being 'a laughing matter', they are inferring that according to *their* experiences and hence their ILR, that laughter is out of place. They cannot imagine themselves laughing under the same circumstances and perhaps in the same circumstances, laughter would offer them no benefits. The remarks below are indicative of a situation in which the observer interprets another's laughter as being inappropriate:

> I remember years ago, this fella said he'd lost his little finger and someone said to him 'God that's awful' and he started laughing and he said, 'Ah no, it's not. I never used it anyway.' Obviously, if you lost your finger you would be a bit upset, but he laughed, and you could see by him, it was denial. He was very upset about losing his finger, but he was making light of it and laughing anyway. It wasn't a laughing matter, you know, he got his hand caught in a machine. (Andrea – Interview Participant)

This is not to suggest that either the laugher, or the observer is wrong. As with understandings of appropriateness with regards to social laughter parameters, each case of emotional buffering differs and there is always potential for a gap between the interpretation of laughter's effectiveness and the reality experienced by the laugher. With decades of experience as a counsellor however, it is likely that Andrea's interpretations above, which are informed by observations of multiple clients laughing during challenging therapy sessions, have some degree of accuracy.

Indeed, both Andrea and Samantha, counsellors with many years of experience, were very cognisant of laughter in therapeutic sessions and each described how she would interpret laughter in a session as being a marker that the topic being discussed at the point of client laughter should be returned to at a later time. They could see that some form of emotional buffering was taking place. This point holds a resemblance to Stengel's (2014) assertion (discussed earlier) that each expression of laughter should

be recognised as a marker for a potential point of learning. In this case, the learning may be therapeutic rather than academic.

For instance, on occasions in a therapeutic session, when Andrea would interpret that a client is experiencing a major point of discord, which the client was negotiating by distracting with laughter, she would eventually tackle the subject at an opportune time:

> I would recognise that this person isn't ready to go there and I might tone it down, or I mightn't even go there in that session. But in the next session, I might draw their attention to how they 'didn't seem concerned' about a particular thing, 'You were making light of it, but I think it's something we need to talk about.' (Andrea)

Andrea notes that clients would often cry at this point. It may be that the client, at that moment, through the intervention of the therapist, becomes aware of his avoidance of the seriousness of the matter as he begins to process the true gravity of the situation. The potential for laughter to negotiate the emotional pain attached to the subject under discussion has been reduced, or even eradicated, due to the sudden conscious awareness of the buffering tactic. It is a matter of professional and experiential opinion, as to whether this erosion of the buffering effect of laughter is a positive step, or not. Some therapists will see this as a great opportunity to move forward in the therapy, whereas others will see it as leaving the individual exposed, without their defence:

> There's a saying, 'Every cow likes a big field.' I'm quite happy to let it wander around in there, but the very fact that there's a gate on the field, means that there is something on the other side of the fence [The point of resistance/discordance]. So, I don't ever drag anyone across their fences. They built them for a good reason. (Samantha)

Whilst professional therapeutic settings may not be obvious environments in which laughter is likely to occur, research has shown that laughter is indeed a feature of many therapy sessions (Gervaize, Mahrer, & Markow, 1985; Mahrer & Gervaize, 1984). Based upon their analysis of records of therapeutic sessions, the researchers developed a categorisation of eight different types of interventions which they propose lead to increased instances of ‘strong laughter’ by the client in reaction to ‘risk interventions’ by the therapist.

Such ‘risk interventions’ offer yet another example of experiences of discord instigating laughter, as they consist of behaviours which are “anxiety-engendering, unusual, tabooed, threatening, impulsive” (Mahrer & Gervaize, 1984). Whilst they operated their study on their understanding from the literature (which they described as scant) that laughter in such circumstances offers therapeutic benefits, they did not set out to examine to what extent such laughter is beneficial to the client.

However, later research, by Falk and Hill (1992) which sought to replicate the study, contradicted the original findings, in that the later study found that “decreasing levels of laughter were associated with risk interventions “51% for non-laughter, 40% for mild to moderate laughter, and 25% for strong laughter” (Falk & Hill, 1992, p. 44). Whilst the researchers did conclude that “humorous interventions, particularly those designed to release tension (although it is not clear how they quantified this), were the most likely to be associated with client laughter” (Falk & Hill, 1992, p. 45), they went on to suggest that:

> Although we know that counselor humor led to client laughter, we did not examine what the laughter meant in the therapy process. Further empirical work needs to be done on the therapeutic role of client laughter and on whether counselor humor or risk interventions that led to client laughter are valuable therapeutic events. (Falk & Hill, 1992)

Indeed, beyond a consideration of whether the provocation of client laughter is useful as a progressive therapeutic tool, it is worth considering if it may be harmful to assume that promoting laughter in therapeutic arenas is a positive approach. Arguing from a psychiatric perspective, Kubie (1994) suggests that while humour may be useful in everyday settings, laughter provocation attempts in psychotherapy have destructive potential and may actually be dangerous.

Kubie’s suggestions regarding humour are certainly worthy of further investigation in therapeutic settings, given the risk for potential harm. However, there is also the risk of missed opportunity if the processes at work are not adequately understood. Given the emergence in this grounded theory of laughter operating broadly as an efficient tool for negotiating experiences of discord, I believe that caution should also be applied to

attaching negative connotations to laughter in serious situations, inside or outside of the therapy room or clinic. I propose that rather than considering laughter's occurrence in extremely stressful, or indeed potentially traumatic circumstances as being an unequivocal indication of neurotic behaviour, it is more helpful to examine the incident in terms of the application of a tried and tested tool of emotional recalibration, which has been useful in other circumstances, and is now being extended to attempt to negotiate more serious discord.

Perhaps, for some, laughing despite adversity is not an immature unconscious defense mechanism, but a mature refinement of an innate system. Whilst attempting to negotiate some experiences of discord may be a misapplication of the limited effectiveness of laughter in buffering emotions, for some, laughing at an experience of substantial discord may actually be a sufficient means for dealing with the particular challenge and this possibility is worthy of consideration.

I wish to acknowledge that there is undoubtedly a conflation of humour and laughter in the situations described above. The well-established concepts of gallows and dark humour and the general application of humour in emergency situations by police officers, medical staff, social workers and similar frontline staff offer striking similarities to the idea of laughing as a means to buffer the emotionality of experiences of extreme discord (Bennett et al., 2014; Mansson, Elfving, Petersson, Wahl, & Tunell, 2013; Mora-Ripoll, 2010b; van Wormer & Boes, 1997).

As was mentioned earlier, it was discovered at the beginning of the current research undertaking that separating laughter and humour in a research paradigm is a challenging, but not impossible undertaking. As such, I wish to propose that whilst humour alone may offer benefits in this regard, that it is when laughter is the consequence of such humour that emotional challenges are most likely to be buffered in a manner which makes such potentially traumatic events more manageable. My reasoning is that humour without laughter could reasonably be considered to be a failed laughter provocation, or in other words, a 'bad joke' and a bad joke at a highly stressful time may serve to increase stress, rather than buffer it. A topical example at the time of writing, is Donald Trump's 'joke' that he asked 'his people' to slow down testing for Covid-19 at a time when the death rate in the US form the disease was on a strong upward trajectory.

It is incumbent upon researchers in the areas of laughter and humour research to acknowledge this overlap and to make methodological efforts to separate, to the greatest extent which is practicable, the effects of each of these distinct phenomena. The reasoning is apparent, in that there is a distinct possibility that either laughter or humour is being lauded as the variable of influence, when this may not be the case.

Another point for consideration with regards to the conflation of laughter and humour is the question of who obtains the potential benefits from laughter provocations which might be classified as dark humour? Is it the person who attempts to provoke the laughter, is it the person who laughs at the provocation, or is it both parties from different perspectives? In their examination of the buffering effect of 'coping humour on traumatic stressors in firefighters', the authors (Sliter, Kale, & Yuan, 2014) suggest that "laughter can contribute to feelings of well-being" (2014, p. 260) as part of their reasoning for their hypothesis that humour can buffer stress. While the tool which they used to measure humour, Martin & Lefcourt's Coping Humor Scale (1983) focuses upon the humor styles and approaches of the laughter provoker, the implication of the nature of the questions on the scale, such as "I usually look for something comical to say when I am in tense situations" is that the attempts at humor are social in nature.

While coping humor affects the creator of the humour, it likely also affects the audience to the laughter provocation attempt. It may well be that it is they who laugh, while the laughter provoker revels in the laughter, but may not even laugh themselves, much like a comic on a stage. Perhaps, just as with professional comics, the laughter of others is a currency of reward for people who attempt to buffer stressful experiences in social settings.

Not only does the emotional buffering work for the provoker through humour, but also for those in the social setting, through the audience laughter. As Sliter et al (2014) pointed out, there is an enhancement of likeability associated with those who are high in humour creation ability and it may be that this sense of being liked, or associated social benefits to being liked, such as enhanced social supports, contribute to the buffering effect of coping humour. However, when it comes to the application of interpretations with regards to laughter provocations, there is an inherent risk that an attempt at humour,

especially dark or gallows humour in a traumatic circumstance, may fail to provoke laughter and may actually enhance emotional turmoil.

However, the current study relates to when laughter does occur and while consideration of failed humour is of interest, it is not the primary focus of the research. Returning to the topic of the opening paragraphs of the current section, the difference between laughter of distraction and laughter of denial is a matter of degree, as there is no obvious point at which an outright denial of a discord is unambiguously transformed to the status of a mere distraction technique.

In either instance, or on any point on the dimension between these two extremes, what is occurring is a form of emotional buffering, in which the individual uses laughter to buffer the experience of the challenging emotions which they are seeking to downgrade, or avoid. They may even use the laughter to allow them to approach, but not directly tackle a challenging emotion, whilst keeping some level of emotional distance from it – a point which is evident from the description below of a pattern to laughter in therapeutic encounters:

> I remember a girl who suffered horrendous abuse and she was laughing telling a story of how herself and her brother were hiding behind a chair, while her father abused another of her siblings. That's really awful, but sometimes when clients are telling you about the abuse, they would kind of laugh about something unrelated, like a noise they remember, or something on the curtains. It's just to take away from thinking about the awfulness. (Andrea)

Whilst in extreme circumstances such as that described above, it is unlikely that laughter will offer any resolution for the emotional trauma attached to the circumstances of abuse, it is apparent that laughter is helping to ‘take away from thinking about the awfulness’. As such, laughter is indirectly helping the victim to negotiate her way through the healing process by picking away at the edges of the trauma and slowly working her way towards it, with the support of her therapist.

For less traumatic circumstances, in time, laughter may well work to manage and possibly even mark a resolution of the discordance, when the temporal and emotional distance from the event has had a sufficient dampening effect upon the experience of

discord. At such a point the discordance finally falls within the ILR. In other words, the challenging emotion truly becomes a laughing matter.

In summary, to what extent this buffering effect is of benefit to the individual is unique to that person. Although it may be appealing to think of the use of laughter in these situations as not 'dealing with' the underlying issue, many people experience a certain value in using laughter as a buffer. In such cases, people are aware of the discordance and they embrace the use of laughter as a means to negotiate it.

For others, their use of laughter is understated, in that they don't consciously use laughter to deal with discordance, but their implicit actions of laughing at matters related to the point of trauma may help them to work towards dealing with it. Others yet may use laughter as an outright distraction or block from their trauma. However, as the following quote which was offered as a summation of people who laugh consistently at challenging emotions suggests, this approach may not be ideal as a long-term solution to negotiating challenging emotions:

> The laughter often turns to depression, because they're not dealing with it and sometimes it catches up with them. (Andrea).

With this in mind, this theory suggests that laughter did not necessarily evolve as a means to negotiate the major emotional challenges of life, yet, for some people it has become somewhat useful in this regard. The matter of how this process may work is the topic of the following section.

7.2.3. Beyond Distraction

What is particularly interesting about the quotation above, regarding laughter's use as a primary coping mechanism leading to depression, is the implications it has for the effectiveness of laughter's emotional buffering potential. In particular, how, when laughter is used as a primary emotional buffering mechanism for an extended period of time, it can be interpreted as a misapplication of laughter. In such cases laughter may be an excessive distraction which does not benefit the laugher in the long-term:

> Sometimes laughter can get them through that bit more. I suppose you have to decide, will I laugh all day, or will I cry all day. I do see a lot of people who do that. One girl I'm dealing with, she'll go into this big laugh, but she's so sad when she laughs. I'd look at her and I'd say 'Are you OK?' and she'd say 'If I don't laugh, I'll cry'. That's her way of getting through the whole day, not just with me. It's her coping mechanism. She's someone who does a lot of laughing actually, but if she didn't do that, she'd do a lot of crying. (Andrea)

As stated in the closing remarks of the previous section, it is proposed that laughter is predominantly an innate tool for negotiating *minor* experiences of discord. However, this use has been extended, to varying degrees of success, to negotiate more challenging experiences. As was also discussed, one of the manners in which this process occurs is through distraction.

However, research has shown that merely distracting oneself from troubling thoughts, whilst it may be beneficial in the short term, is not as effective as disputation of those same thoughts. As Martin Seligman (2006) explains in his discussion of how to negotiate pessimistic beliefs, there two ways to tackle such beliefs:

> The first is to distract yourself when they occur – try to think of something else. The second is to dispute them. Disputing is more effective in the long run, because successfully disputed beliefs are less likely to recur when the same situation presents itself again. (Seligman, 2006, Chapter 12, Disputation and Distraction, para. 1)

By applying this same reasoning to laughter, it seems that if laughter is limited in function to distracting an individual from discord, then laughter may well be limited in its effectiveness. However, before simply writing laughter off in this regard, I wish to propose that the act of laughing may offer, as was introduced in chapter 5, a rejection of an experience of discord. Whilst this rejection is not as cognitively elaborate as a logical disputation of maladaptive thought may be, it does hold some resemblance in form, in that the ultimate consequence is a rejection of the point of discord, just as a disputation of a maladaptive thought in a cognitive therapy is a portrayed as a rejection of the belief surrounding the thought (Keefe et al., 2016).

The act of laughing is by its very nature a recognition of the existence of a point of discord and a subsequent rejection of it. Indeed, laughter can be symbolic of a challenge to authority in part due to its vivid highlighting of such discordant behaviours as errors, or failures – a commanding means to draw unwelcome attention to the shortcomings of those in power. For instance, a particularly troubling phenomenon in Zimbabwe under Mugabe's reign, was the arrest, or disappearance of people who dared to laugh at the expense of the leader, as one man learned after joking about the president's temperament, as the news article commentary below portrays:

> All of a sudden, the bus changed its route and stopped outside a police station. One passenger pointed at the joker and said: "That one, he insulted the president." Soon, the whole country knew the president was "hard-headed", and they laughed in subdued ways in isolated places. The law: be silent on your bus trip if you don't want to arrive at a prison cell instead of at your house. Cruel, beloved homeland, deprived of the permanence of laughter, but allowed only to cry with wrinkled faces of sadness, or dance with commandeered joy. ("Mugabe: when laughter becomes illegal ", 2013)

Laughter is therefore a rejection of discord in the sense that it marks a vivid realisation that something is amiss. If one recognises a discord, (even in an implicit sense) and finds a means to integrate it with expectations and lay down a revised understanding of existing knowledge, then I propose that there is little to no reason for laughter to occur in such circumstances.

However, as was introduced in the earlier discussion of event segmentation in chapter 5, if one cannot find a means to integrate an experience of discord, then this experience

of discord must be dealt with in some alternate fashion. Depending upon the extent of the discord, one means of dealing with it is by rejecting it through laughter. I propose that it may be possible that laughter has in-line implications for the memory formation process, in that laughter may act as a cognitive marker which indicates that the discordant experience is not to be drawn upon in the future as a reliable exemplar of knowledge for making future predictions.

In terms of the processes involved in memory formation, it may be possible that laughter alters the encoding of new memories which had the potential to be negatively valenced if they had not been associated with laughter. With the subjective positive feelings associated with a laughter reaction to a particular discordance providing a positively valenced contextual foundation, which is either devoid of emotional distress, or which has reduced the capacity of potential distress levels, it is possible that subsequent recall will be influenced by a laughter mediated buffering effect.

The phenomenon of *positivity bias* with regards to long term memory (Baddeley et al., 2009), by which people have a tendency to remember positive events with more frequency than negative ones, may be partially explained if it were to transpire that encoding of these memories was influenced by laughter occurring at the time of the memorable life event – a point worthy of further investigation in future research.

A buffering effect during encoding may lead to a less distressing recollection of an experience than if there had been no laughter associated with it and the discord were managed through alternative means, such as an outright avoidance activity, or simply becoming engulfed by stress. The following quote is from a psychotherapist who also is also a laughter yoga teacher. When I asked her does the stress of dealing with clients stay with her, she responded:

> When you're listening to sad stories and traumatic stories all of the time, it does, even though you don't want it to affect you, there is a part of it that does affect you. It does get in, so now, to bring in laughter into the equation. If I have a lot more fun in me. It's in my whole being, so I'm emanating laughter and when I'm working with someone with depression, or anxiety, they're picking it up from me on a psychic level. Do you know, so it's going to tap into that joy that's in them. (Jill – Interview Participant)

As was explored earlier in terms of challenging emotions, in the moment, the bad experiences of the day are buffered through laughter and the negative impact is reduced. Additionally, however, in a retrospective sense, the same bad day with the same set of events can be interpreted entirely differently if the recollection of the experiences includes associated moments of laughter, rather than moments of frustration of anger for instance, if they had occurred instead.

Furthermore, on a more long-term basis, it may also be that laughing at the recollection of a point of irreconcilable discord, which was too troubling for laughter at the time of the experience, acts in a fashion which helps to promote an overwriting of emotional learning surrounding that experience. I theorise that laughter in this sense could be an innate mechanism which contributes to the process of memory reconsolidation – the means by which the emotional experiences surrounding a memory are open to being destabilised and overwritten during a period when the memory is vulnerable to reconstruction:

> According to the reconsolidation hypothesis, memory recalled by the presentation of a reminder enters a vulnerability phase (labilization) during which it is transiently sensitive to disruption, followed by a process of stabilization (reconsolidation) that returns memory to the former consolidated state (Pedreira, Perez-Cuesta, & Maldonado, 2004, p. 579)

The process of memory reconsolidation (albeit without the formal recognition of laughter playing any role) is harnessed by practitioners of coherence therapy (Ecker et al., 2012). This is a therapeutic intervention in which troubling memories are recalled under supervision, and a juxtaposition experience is offered which does not dispute the event, but offers an alternative emotional experience of a similar event.

An instance might be a recollection of a drunken father becoming angry towards a child when expectations were not met, with the consequence that later in life, the adult child of the alcoholic attempts to please everyone in a position of authority at all times for fear of being severely reprimanded. The therapist might encourage the patient to recall such a childhood event, then a later experience when the expected pattern did not follow through and a person in authority reacted in a calm and supportive manner, even though an expectation was not met. The juxtaposition of the emotions surrounding these events

are not compatible and it is proposed that the positively valenced emotions can override the earlier emotional aspect to the memory.

In this approach, the autobiographical memory or semantic memory of the experience need not change, but the purpose of the therapy is that the emotional meaning attached to it does (Ecker et al., 2012). In a therapeutic setting, any approach which might involve attempting to overwrite aspects of traumatic memories through the use of laughter would require in depth research to assess its efficacy and safety. I do suspect however that co-laughter amongst client and therapist, or perhaps client only laughter may already be occurring in such therapeutic memory reconsolidation sessions. Whether laughter in such circumstances offers the potential benefits which I propose may be a worthwhile path for future research exploration.

By extension, in the case of laughter in everyday experiences, I propose that the recollection of an experience which was once very troubling and therefore exceeded an individual's laughter range, may with the passing of time, lose some of its emotional severity. This process reflects the concept of 'time as healer'. When the emotional arousal attached to the experience decreases to the extent that it becomes processable by means of laughter, then memory reconsolidation may already be occurring in everyday life. As TV personality, Steve Allen was quoted as saying:

> When I explained to a friend recently that the subject matter of most comedy is tragic he said, "Do you mean to tell me that the dreadful events of the day are a fit subject for humorous comment? The answer is "No, but they will be pretty soon." Man jokes about the things that depress him, but he usually waits till a certain amount of time has passed. Tragedy plus time equals comedy. (Allen, 1957, p. 12)

I do not propose that this series of events always occurs intentionally. However, it is a common occurrence that people cannot laugh at an experience for years, then suddenly, when someone brings up the topic, it becomes subject to great hilarity. In such cases, due to the emotional distance from the event, the emotional weight of the previously unspeakable event is lifted and from that point forward, when the topic is discussed, it is with a less harrowing emotional impact. This, I propose, is laughter buffering previously severe experiences of discord through memory reconsolidation.

The passing of time is an important factor in the process of laughter assisted healing. However, time alone is not the only relevant factor in a healing process. The extent of the emotional pain associated with the experience of discord interacts with the length of time required for healing to take place. Furthermore, an emotional discordance can only be effectively processed by means of laughter if it falls within the ILR.

The greater the emotional pain and associated experience of discord, the longer it takes for the pain to fall within the ILR. The smaller the extent of the pain, the less troubling is the discordance and the quicker it can fall within the parameters of his range, thereby making it available for processing by laughter. As each ILR is unique, each individual will reach a state which is conducive to emotional buffering through laughter at a time which is unique to them.

Theoretically, a person with a typically broad ILR will require a shorter time span before they can laugh at a troubling discordance, whereas a person with a typically compressed contextual laughter range will take much longer, or may indeed, without the aid of supporting factors, such as a formal therapeutic intervention or supportive social structures, never be in a position to process the discordance by means of laughter. In such a case, the troubling discordance may always remain outside of their laughter range. Consequently, they may never laugh at it and potentially, they may never quite make the final emotional recalibration which laughing at a troubling discordance offers. (This is not to suggest that they may not process the discord in a manner more suited to their personality).

Another example which may be memory reconsolidation in action is laughter at funerals in response to eulogies, which as I mentioned earlier, was an extremely common occurrence in the gathered data. Apart from such laughter being an astute emotional shifting device on such a challenging day, by linking the positive emotional valence associated with laughter to the recollections of the deceased, the person offering the laughter evoking eulogy is providing an opportunity for the reconsolidation of the memories of those who are there to celebrate the life of the deceased:

> Our mother was very resilient. Every time that she ended up in hospital we fully expected that she wouldn't make it, but every time she'd survive it and she'd come back out a changed woman, never going to

> drink Cabernet or smoke Rothmans again. Then, the next time she would come out, she'd promise never to drink Merlot or smoke Benson and Hedges again. By the time she passed away she was down to only one grape variety and was vaping. (Anon Eulogy)

A further source of evidence with regards to the influence of laughter upon memory is research which has shown that laughter has also emerged as being an agent in the enhancement and maintenance of positive social relationships. Research has shown that simply recalling past events, of which laughter was a feature of the experience, has the effect of an immediate enhancement of relationship satisfaction amongst couples (Bazzini, Stack, Martincin, & Davis, 2007). The researchers discovered that reminiscing about events which included laughter had a stronger positive effect than reminiscing about positive events which did not have a laughter component. They proposed that "the communication of the experience leads to a more thoughtful elaboration and cognitive appraisal of the event, making it a more salient influence on judgments relative to the relationship" (Bazzini et al., 2007, p. 31). Furthermore, they suggested that by recalling the experience of laughter, they re-instigated laughter through a reliving of the original experience.

As this experimental manipulation was a snapshot of relationship satisfaction immediately after the recollection process, it is not possible to elaborate on the long-term effect of the act of recalling shared laughter. However, as laughter in first time interactions can enhance the feeling of closeness (Fraley & Aron, 2004), with the authors suggesting that this laughter indicates to the interactors that they share similar perspectives, it seems that laughter early in a relationships is a good start. Combine this knowledge with data which shows that amongst a cohort of couples with an average relationships length of 4.17 years, "the proportion of the conversation spent laughing simultaneously with the romantic partner was uniquely positively associated with global evaluations of relationship quality, closeness, and social support." (Kurtz & Algoe, 2015, p. 573) and there is a strong indication that laughter in relationships has a positive influence.

Whilst the data above is related to romantic relationships, research which indicates laughter's positive role in social bonding (Curry & Dunbar, 2013) would support my suggestion that any overlap in individual laughter ranges (which integrates well with the notion above of shared perspectives) and hence laughter potential amongst social

interactors, would be beneficial to that relationship. As such, opportunities for shared laughter allow opportunities for shared experiences of the negotiations of discord and enhanced closeness at that moment in time, in the future and upon recollection of the shared of experiences of laughter.

In summary, whilst laughter may not have evolved as a means to negotiate challenging emotions which may be related to troubling experiences, it is possible that for some people laughter now contributes effectively to emotional buffering of more serious degrees. It is proposed that the role which laughter plays in this regard is more complex than a simple distraction. Indeed, laughter may influence not only how memories are formed at the time of laughter, but it may also contribute to a process which helps people to reconfigure how they experience emotions related to difficult memories. Furthermore, simply recalling events from the past during which laughter was a feature of the experience, contributes to the enhancement of satisfaction with regards to romantic relationships and this effect has implications for other social interactions, including social bonding amongst friends.

7.2.4. Mood Enhancement (of self and other)

Whilst the theme of the previous sections focused upon challenging emotions and how excessive use of laughter as a distraction technique may be detrimental, attention now turns to how people use laughter as a means to enhance the mood of themselves and others. As has already been established, positive valence is not a necessary or sufficient precursor to the instigation of laughter. Nor is negative valence a reliable inhibitor of laughter. Indeed, with the supportive strength of interchangeable indicators, it has emerged that transient emotional states can be overridden quite readily by laughter. For instance, the purposeful intervention of others in provoking laughter can alter transient emotional states:

> Yesterday we were doing long division and it's all very heavy. It's awful. If they're up for it, I'll throw in a little bit of laughter where I can. I think it relaxes them and I think that if they become more relaxed and comfortable being there, they will be more receptive to learning. If the kid is happy, they'll open up to you a bit. (Sinead – School Teacher)

To have the ability to alter the emotional state of another individual, or group of individuals, is an empowering experience and one which has potential to provide benefits to both parties, as a laughter yoga practitioner explained:

> The greatest thing with discovering laughter yoga is that we tell people that we don't laugh because we're happy. We're happy because we laugh. So, laughter can really create happiness. Because normally, we believe that there has to be something, some reason, or some condition in your life to make you happy, but we found that happiness is not external in laughter, happiness is within you. You can make a choice to be happy, without depending on something to be happy. (Dr. Fitzmaurice – Interview Participant)

Whilst humans are not born with the prerequisite skills required to intentionally provoke laughter in others, it is a skill which children develop experientially. The transition from seeking to make others laugh, in order to gain attention (an egocentric position), to seeking to make others laugh in order to make them feel better (an altruistic position), can be witnessed as a developmental transition between younger and older preschool children and beyond, as the comments below by a Montessori teacher exemplify:

> For this age group, it's more for attention [provoking laughter]. If they do something and they see their peers laugh, they'll repeat it, more so to hold the attention. Now, next door [older age group] it would be different. In here, they're only coming up to three years of age. At this stage they can't really empathise either, so making someone laugh to make them happy is slightly more the empathy type spectrum.
>
> These aren't at that… In the other room, some of them might be coming up on five. Now, empathy would certainly kick in next door.
>
> My own daughter, who is nearly six, she would do that…quite a bit. If she saw someone sad, she would pull a funny face to try to make them laugh. So, certainly at that age and even from five they'll do it. (Bernadette)

This comment provides the basis for a concept of developmental progression of laughter provocation motivations. It also exemplifies how a child as young as six years of age can seek to shift the emotions of another person, by means of a laughter provocation. This concept is broadened by consideration of the inclusion of observations, which I made of my own daughter's development of laughter provocation skills, to which I will now turn.

> After asking me to tell her a joke and laughing, she would ask me "*why is that funny?"* I resisted telling her that the incongruent components of the joke create a cognitive/emotional experience of discordance and laughter is a means to negotiate the consequential tension which ensue. Instead I told her "Because the bits don't match and it makes you laugh."
>
> After that, she told many jokes of the "Why did the chicken cross the road?" genre, followed by punchlines which were entirely nonsensical. To satisfy her, I laughed each time as best I could and I told her that her joke was very good. She never looked satisfied with my reactions. I noted how she often looked embarrassed and frustrated that another joke had failed. On one occasion, her punchline was "because he wanted to get squished", to which I burst into laughter. With a grin, she exclaimed, "You really laughed. All the other times I told you a joke you didn't really laugh, but this time you did!"
>
> This time, I was embarrassed as I realised that I had not convinced her on all those other occasions, when I feigned laughter, that my laughter was 'genuine'. My goal-oriented laughter attempts had failed. (Researcher's notes)

What exactly it was about that particular joke which made me laugh, while so many others did not, is not the point of this example. The salient aspect is that a young child

had witnessed and experienced how jokes made people laugh and how the consequential laughter appeared to make them happy. She had then diligently set about trying to crack the formula of replicating this phenomenon through trial and error and she was not satisfied until she got a vividly positive emotional response.

If the point of her efforts were only to 'put bits that don't match' together, then she had succeeded on numerous occasions, as nothing in her jokes had ever matched. However, it has become apparent that this was not her goal. Her goal was to use this formula to get a truly emotional reaction - as a means to shift my emotions from one state to another – to enhance my mood.

The desire to shift the emotions of others through the provocation of laughter and indeed, to shift one's own emotions through laughter is a commanding one. The pleasurable, and hence rewarding aspect of laughter ensures that people not only learn to seek opportunities for laughter out, as is evidenced by the ranking of comedy movies as the top grossing genre from 1995-2014, with a 22.4% share of the U.S domestic market and a total gross figure of over $38b (N.I.S., 2014), but it also enthuses them to study and learn the means to provoke laughter in others.

Laughter, as has already been shown, is a predominantly social phenomenon (Provine, 2000). Yet, solitary laughter does occur:

> Laughing alone hardly depicts madness. At least, I hope not. I often sit and think about things that have happened and I laugh and laugh and laugh until the tears are rolling down my face and there's nobody else around. (Anon blogger – Google Alerts)

For some it is harnessed as a technique for a "daily laugh alone" session, which it is believed offers "health benefits to your body and mind" (Rivest, 2012) and that "Laughter is good for your health, [it] helps to unwind negative effects of stress" (Kataria, 2010b).

Laughing while alone to enhance one's mood need not consist of formalised techniques such as solitary laughter yoga, which Kataria (2010b) and Rivest (2012) mentioned above teach in their instructional videos. I had one participant describe how he recalls

making himself laugh by looking in a mirror, drawing his arms back so they look like stumps and making a roaring sound like a T-Rex. As bizarre as it may sound, this is just one technique which he uses to shift his own mood while alone.

In what was somewhat of a paradox initially, in early observations I often recorded situations in which people who were alone, yet in crowded places, were laughing to themselves as they listened to some form of entertainment on earphones. Below is a memo which was written on the subject, in the early months of the research process, as I began to consider the notion that laughter is not entirely social (or at least, it is not entirely social in the sense that it requires the physical presence of interlocutors), nor can it always be interpreted as a signal to others:

> People are often laughing with earphones on. Must be listening to someone/something. If laughter were entirely a social act, then why would someone laugh in this circumstance? This must mean that there is an entirely 'self-centred' aspect to laughter, in addition to any social signals.
>
> If laughter is a visual/verbal signal to indicate to someone else our pleasure/joy, then why do we do it when alone, listening to someone we know cannot see or hear us and why do we try to hold the laughter in?
>
> I've done it many times and I actively try to hide the fact that I'm laughing - Why is this? What do people think of others who are laughing to themselves? (Research Memo).

This memo is informative, in that it questions the very meaning of social laughter. Is it truly solitary laughter if one is laughing because of something that has been said on a radio show – an undeniably socially constructed form of entertainment? Is it truly social laughter if the person provoking the laughter is a disembodied voice which is not speaking directly to the laugher? The memo also recognises that in contrast to any notion of laughter as a signal of joy, people (myself included) tend to restrain their ‘solitary laughter’ in keeping with the principle of social laughter parameters, which do not allow for solitary laughter in public places. This ‘social parameters’ concept had not been recognised at that stage until it patterned later out across a multitude of settings, such as in the quote below, which is uncannily similar to my own memoed experience:

> Laughing alone always feels insane. It's not quite as bad as being the only person laughing in a group, but it's bad. I'll sometimes crack up

> on the subway while listening to a podcast on my headphones, and people look at me like I just asked them for blood plasma. (Anon contributor – Google alerts)

Despite the above memo offering early indications of principles which emerged later in the theory, it was also an early recognition of the act of intentionally using laughter as a means to shift states. This was recognised in my own behaviour when I compared it to the similar behaviour of others who I saw laughing to themselves on public transport etc. I am now aware that I often listen to humorous podcasts or recordings of stand-up comedy on my early morning commute in an effort to invigorate myself and set my day off on a positive note. As I did not interview any laughing commuters, I cannot know if they too intentionally listed to audio material which made them laugh. However, I would suggest that the comedic approach of many morning radio shows is not an accident and that people actively seek such forms of entertainment out in the morning for reasons similar to mine – to shift their emotional state.

This discussion reintroduces an important point at this juncture - that laughter can be negotiating two forms of discord simultaneously. There is the underlying 'technical' discord of the matter which provoked the laughter in the first place – the primary discord. This could be a joke from a radio presenter, a comical line in a song, an incongruent sound – indeed the potential list of stimuli is too vast to list. The second discord in the above example is an experience of a low mood in the morning and the desire to overwrite, or shift that mood to one which offers pleasurable feelings by purposively placing oneself in a situation (by listening to comedy for instance), which increases the likelihood of laughter (and a consequent emotional overflow effect) occurring.

As was introduced in chapter 5, in the early discussion of the concept of discord, I refer to this form of discord as a *secondary discord*, in that the discord which is being negotiated is not the underlying cause of semi-reflexive laughter, yet the consequence of the laughter is the same, in the sense that it contributes to a shifting of states.

7.2.5. Negotiating Secondary Discord

As mentioned above, the concept of secondary discord can be readily applied to many situations and the phenomenon of laughter in social settings has regularly emerged throughout the current theory. Perhaps the most common form of laughter which incorporates both of these aspects is the apparently spontaneous laughter which occurs in everyday conversation. However, as was discussed early in the current theory, even laughter which appears to be entirely spontaneous is proposed to be subject to some level of cognitive processing which contextually situates the person who is experiencing a degree of discord.

This contextual situation may be influenced by any of the factors outlined in the laughter configuration matrix – interpersonal and intrapersonal factors, situational and interpersonal expectations, the influence of prior learning etc. All of these factors and more act upon a person's tendency to laugh, including in conversational settings and as such, configuring factors also influence the presentation of secondary discord. Beginning with conversational laughter, the current section will explore examples of such secondary discord as a means to clarify the meaning of the concept and in order to situate the negotiations of secondary discord through laughter within the closing stages of the overall theory.

Whilst laughter has been observed to occur in conversations during the course of the current research, the examination of such laughter did not initially extend beyond a cursory analysis, such as considering what happened just prior to the laughter taking place. However, with the emergence of new concepts, the comparison of concept to concept and the ongoing development of the current theory, seemingly straightforward observations took on a greater depth of meaning.

For example, whilst observing people going about their business on a busy street in Dublin, two men almost walked past each other, when they both suddenly paused as they recognised each other. One of them laughed out loud before he announced 'Ah Jayzus, I haven't seen you in ages. Listen, I'm in a rush, I have to keep moving." After which they exchanged brief pleasantries and parted company. In this situation, there was no apparent humour leading up to the laughter.

The easiest explanation of such laughter would be ‘nervous laughter’, but one could argue that all laughter is nervous laughter of some degree, in that there is some underlying experience of discord. In the initial phases of the theory development, this interaction would have been interpreted in the following manner: *Perhaps the experience of discord was associated with meeting someone that he didn’t expect to meet, thereby instigating his semi-reflexive laughter.*

However, the secondary discord which I now propose was negotiated in the interaction was the awkwardness of the meeting. The two did not seem interested in conversing and parted company within seconds. The laughter helped to negotiate that awkwardness in some manner. Had it not occurred and the interaction had been devoid of laughter, the comment ‘I’m in a rush, I have to keep moving’ would have been a great deal more socially awkward, perhaps even rude.

Whilst, as mentioned earlier, Robert Provine (2000) had a group of his student record and analyse pre-laughter comments (discovering they were mostly devoid of humour), the precise meaning and use of laughter in conversation is a field of specialisation which has been the focus of attention of many dedicated researchers in the field of discourse analysis. The purposes which have been uncovered in conversation have included invitations for turn taking (Glenn, 2008), the representation of praise (Glenn, 2008), teasing other parties in the conversation (Lampert & Ervin-Tripp, 2006), a means to signal a desire for topic change (Bonin et al., 2014), reinforcement of “the hegemony of the roles of interviewer and interviewee” (Glenn, 2010, p. 1485) and the purposeful creation of ambiguity in jury deliberations to buy the jurors time to think (Keyton & Beck, 2010), to name but a few.

As is clear from this list, the variety of uses which have been researched elsewhere is extensive. However, what each of them has in common is that they are a means to negotiate a secondary discord, yet the discord may not even be apparent to the people who are interacting.

This is not to suggest that secondary discord is any less significant than laughter which occurs as a consequence of a primary experience of discord, such as being an audience

to a joke. To the contrary, returning to the earlier consideration of challenging emotions and the later discussion of mood enhancement, the notion of secondary discord could be applied to many of the circumstances related to laughter in such cases. For instance, those who use techniques such as pulling silly faces to instigate laughter in others are doing so, not only to create the primary discord (the unexpected silly face to instigate the laughter), but also to negotiate the secondary discord (the recognition of low mood in another and the desire to shift that mood).

With regards to challenging emotions, a client in therapy may laugh at the primary discord of the absurd insignificance of a recollection of curtain fabric, yet they may also be negotiating the secondary (and much more substantial) discord of maintaining an emotional distance from having to tackle the traumatic topic of abuse.

As mentioned earlier however, not all discord can be negotiated by laughter, even if laughter is an aspect of the experience which is directly related to the discord. With regards to challenging emotions and challenging situations, there is an area of some confusion and potential overlap when laughter is a part of an interaction in which the laughter appears to contain malice. However, as was explored in the earlier discussion of interpretations, I suggest that it is not necessarily the laughter which contains the malice, but the behaviours co-occurring with the laughter and the consequent interpretations of those behaviours which lead to a perception of laughter as a tool of malevolence.

I believe that there are certain aspects to the behaviour of laughter, which have been thoroughly examined in previous research which, if left unacknowledged here, have the potential to distract from the strength of the theory. One such aspect is laughter provoked discord caused by what appears to be laughter of ridicule (Billig, 2005; Proyer, Estoppey, & Ruch, 2012; Weiss et al., 2012). The topic of ridicule did not emerge as being directly relevant to the *negotiation of discord* – the core concept of the current theory. Rather, ridicule emerged as being a *cause of discord*, which is why it does not quite fit with the current theory. The gap between the current theory and the phenomenon of ridicule rests in the observation that ridicule need not include laughter and that ridicule tends to be negotiated by means other than laughter.

Laughter is not a necessary component of ridicule, no more than ridicule is a necessary intent, or consequence of laughter. Ridicule is a label which has its origins in the French and Latin word ridere ‘to laugh’. However, its use has broadened in a contemporary context to mean ‘The subjection of someone or something to contemptuous and dismissive language or behaviour’ (Oxford, 2015). Whilst it is not explicit in the definition, laughter is one behaviour which is popularly associated with ridicule. One might reasonably expect therefore, that in a study of laughter, this ‘form’ of laughter would emerge in the data with regularity.

However, in the course of my study, participants’ experiences of a pattern of behaviour which could be described as matching in some manner the offered definition of ridicule, emerged as a concern for only two of the people whom I interviewed. Interestingly, neither of the participants referred to ridicule specifically. Rather, one of the two discussed how laughter had been used as a weapon and the other’s focus was upon his interpretation of the laughter, as opposed to the laughter necessarily being categorised by him as intentional ridicule on the part of the people who were laughing at him.

At the time of the interview, Daniel had only recently come to understand such laughter as a factor in his psychological struggle with a lifelong paradoxical tendency to strive to make others laugh whilst simultaneously resenting them for it. He had become aware that his experience of undiagnosed dyslexia as a child, along with his experience of its consequences, namely intense frustration, contributed to him becoming an enthusiastic provoker of laughter, or ‘class clown’ in his early days:

> You realise, what skills do I have? I'm a class clown. Maybe I can capitalise on that and sell it as a product…You feel very frustrated about not being able to express yourself and so, the feedback is a double-edged thing, because you're getting a response, which is good, but you're getting this kind of laughter which is, you can’t say is gratifying. You're getting a response and you're getting attention, but the other side is that you're being laughed at. So, there's a certain amount of shame and bad feeling, that's being, sort of thrust on to you, if you like. (Daniel)

This clowning role was one which he maintained in his adult life. Daniel, who is now a retired performer, had played the character of a clown in a stage act for many years. It was therefore, his professional role to entertain people with his comical antics, which

were designed to elicit laughter. Yet, rather than interpret the laughter of his audience as a reward for his skills of entertainment, he reflected upon how he often interpreted the laughter as a personal affront:

> Sometimes I would come off stage after a very good show and be filled with incredible anger and frustration and I couldn't put a name on it, I couldn't analyse it. I think now that it was to do with repressing those feelings, you know the normal kind of fight or flight response, you know…If you're surrounded by 500 or a thousand people and they're laughing at you, for what you've just done, I think the normal human response, in caveman days would be to grab an axe and try to kill as many of them as you can. [laughs] (Daniel)

One might not suspect that a clown would have such a strong negative reaction to laughter. I also suggest that any audience member at one of these performances would believe that their laughter would be representative of appreciation, as opposed to being a source of anger and a sense of being ridiculed for the performer. The role of interpretations is therefore a fundamental aspect of ridicule.

I reiterate once again therefore, that the notion of laughter of ridicule is relevant in the current theory as a laughter provoked discord, rather than a specific form of laughter. Certainly, it is not the intention to suggest that people do not laugh at others with the intention of causing them distress. However, the phenomenon did not emerge in the current theory to a degree which supported its integration into the overall concept that laughter is a means to negotiate discord.

In conclusion, having explored in the current section the negotiation of secondary discord and having differentiated it from the phenomenon of laughter provoked discord, I have attempted to offer a theoretical bookend of sorts to the current theory. However, the acknowledgment that the notion of ridicule did not integrate well with the current theory is representative of the discovery, which was acknowledged early in the thesis, that laughter is a multifaceted behaviour. Indeed, laughter is representative of a set of behaviours which can vary from an infant's reaction to a mother's sneeze, to a symbolic challenge to the authority of totalitarian leaders. As such, laughter is resistant to being described and explained in a universal theory – for laughter is not one thing.

With this thought in mind and with the theory now having been presented, the following chapter offers a discussion of the theory, along with acknowledgements of challenges which were faced along the path of theory development, both on a personal, reflexive level and on a methodological level. Consideration is given to ways in which the process could have been operationalised differently and how particular limitations the study may have influenced the outcome. Thought is also given to the place of the current theory with regards to how it may contribute not only to the field of psychology, but also to those who use laughter in their everyday lives in various forms and functions. The exciting possibilities for further research and how these may integrate with and enhance the general understanding of laughter will contribute to that discussion.

8. Discussion

Introduction

The initial general exploration of laughter in all of its emergent forms and functions ultimately uncovered three major concepts:

Firstly, that experiences of discord create the opportunity for laugher. Secondly, that laughter has innate elements, but is a strongly configured behaviour. Thirdly, that laughter negotiates experiences of discord. Each of these concepts has an underlying structure of interacting factors, which provide valuable insights, not only with regards to how we understand the phenomenon of laughter itself, but also by elucidating how a variety of human interactions and intrapersonal experiences are managed through laughter.

These concepts, their most salient underlying factors, and the implications of each of these concepts is considered in the following chapter. Rather than separate implications into a disjointed subsection of this chapter, implications are integrated into the overall discussion. In **section 8.2** consideration is also given to the recognition of limitations which have emerged with regards to the current research. A reflective piece is also presented which explores the experience of carrying out this research and my own place in influencing that process. Finally, concluding remarks with reference to the theory are presented.

8.1. Theory summary integrated with implications

Laughter is a means to negotiate experiences of discord. Whilst laughter can be categorised into a myriad of types, it is the associated behaviour surrounding the laughter and the interpretation applied to it by others which provides these labels. For the purposes of this theory, laughter was recognised to occur in two encompassing forms. That which is semi-reflexive and that which is goal-oriented.

There are elements of laughter which are innate, but the behaviour is largely a socially, experientially and developmentally configured one. This configuration has led to alterations of laughter's innate form and resulted in a variety of strategic uses of laughter. However, even in elaborated uses of laughter, the underlying structure of the functional aspects of laughter is still evident – specifically, the negotiation of discord.

However, the negotiation of discord is the destination, the configuration is the journey and the experience of the discord is the starting point. It is to the starting point that attention now turns - the experience of discord as an opportunity for the instigation of laughter.

8.1.1. Discordance instigates laughter

The first concept to saturate in the current theory was the notion that there is typically an element of discordance of some degree surrounding the behaviour of laughter. This applies most obviously to semi-reflexive laughter and the concept is similar therefore to the concept of incongruity theory in that regard, in that there is a violation of expectations inherent in the instigation of laughter. Previous research has shown a robust relationship between the presence of incongruity and the occurrence of humour (Mahapatra & Srivastava, 2013). However, as with the discord and laughter interaction, incongruity alone is not a sufficient element to guarantee a humorous outcome.

The concept of discord's relationship to laughter in the current theory is more holistic than that of incongruity theory, in that the current theory considers the discordant incident in terms of the current and past context which surrounds it. This includes the context surrounding the predictions of unfolding near-future events. This consideration of near future events is explored through the integration of event segmentation theory, which postulates that one's stream of consciousness is prefaced by an implicit prediction mechanism which estimates (several seconds in advance) the likely outcomes of scenarios which are unfolding in present time (Reynolds, Zacks, & Braver, 2007; Schwan & Garsoffky, 2008; Zacks & Sargent, 2010).

Sometimes these predictions are incorrect however. It is my proposition that these prediction errors lead to experiences of discordance and set up the opportunity for laughter (or a multitude of alternative discord management behaviours, which can include apparent inaction – although learning is implicitly occurring). As regards future research in this regard, I return to an earlier suggestion that the cognitive aspects of humour processing offer valuable insights to the understanding of laughter. Whilst the act of laughing was not the focus in the review by Uekermann et al. (2007) of the cognitive neuroscience of humour processing, the implications of their discussion of ERP data with regards to incongruity recognition and incongruity resolution may well be pertinent to the understanding of laughter. Specifically, their assertion that "the N400 is thought to reflect semantic processing in general and is also evoked by non–humorous stimuli" and their consideration of "whether it reflects the search for a logical explanation for the incongruity (and thus refers to the resolution stage of humor)" (Uekermann et al., 2007, p. 563).

What they question regarding the N400 representing semantic processing and incongruity resolution, I propose may reflect the individual's rapid processing and initial contextualisation of the initial point of discord (likely represented by the P300 ERP) – the first step in considering if laughter is an appropriate response. It would be reasonable to expect that there is still a longer time period after this initial filter during which the individual can further consider their options as regards the appropriate response.

Further examination of existing ERP studies along with elaboration of such methods to include consideration and comparison of laughter, versus non-laughter (rather than humour) conditions in various experimental contexts would help to clarify the validity of the claims of the current theory regarding discordance. Particularly with respect to the notion that laughter is semi-reflexive, rather than a spontaneous reaction to experiences of discord – a point which could be explored further in the timing of ERPs.

Furthermore, the current theory extends beyond incongruity theory to include experiences of discord which are incumbent in situations which are negotiated through the use of goal-oriented laughter. These experiences can be entirely devoid of elements of humour, playfulness or fun and can include such phenomena as conversational laughter and forms of laughter which are produced for any of a number of reasons, including to ingratiate oneself, cover up for a social awkwardness, or otherwise manipulate a social circumstance – the discord being the gap between the desired goal and the current state which the laugher is experiencing.

With regards to conversational laughter, I would suggest that empirical investigations of relationships between personality types and laughter mediated topic change would enhance the understanding of goal-oriented laughter in discourse. If so, then it would be fascinating to explore if personality type is related to the level of skill which is required to manage a topic change successfully, by implementing laughter at an appropriate time. Indeed, consideration could even be given to whether it is a skill, or a hindrance in conversations to have someone use laughter as a means to negotiate a topic change.

Whilst an experience of discord is a fundamental aspect of the laughter process, not all experiences of discord lead to laughter. Consequently, the theory developed to consider

the factors which help the individual to situate their experience of discord in a manner which allows them to direct their discord management resources appropriately. The conceptual framework which represents this complex process of situating discord is the Contextual Laughter Configuration Matrix – the subject of the following section.

8.1.2. The Configuration of laughter

Following on from the notion that the conditions for laughter (particularly of the semi-reflexive form) are interrelated with experiences of discord is the observation that discord often occurs with an absence of laughter as a reaction. Indeed, people do not reliably laugh in response to every discordant event which presents to them, which is a confirmation that laughter is not an automated response. The notion that this is simply because these experiences are not funny was rejected on the basis of the circular nature of such thinking.

A useful investigation in this regard would be to have participants, who are blind to the purposes of the research, simply record their reaction throughout a given time frame in response to events which they found to be discordant with their expectations. Such data would clarify the suggestion that discord is managed in a variety of fashions. It would also offer insight as to the context surrounding laughter events which might be recorded.

With regards to context, progressing the theory on from the discussion of the initial stage of experiencing discordance, ongoing conceptual analysis uncovered that once a point of discord is experienced, it is also filtered through the context of the prevailing situation in which the individual finds herself or himself. This prevailing situation is conceptualised as the *Contextual Laughter Configuration Matrix*. This contextual situation interacts with the individual's lifelong experiences and learning to temper or enhance the likelihood of laughter occurring as a consequence.

This process is the essence of what differentiates the current theory's portrayal of laughter as a semi-reflexive behaviour, from the typical treatment of laughter as a behaviour which occurs in a spontaneous fashion (Bryant & Aktipis, 2014; Lavan et al., 2017). The implication of considering laughter in terms of an entirely reflexive behaviour is that the behaviour is slave to the arrival of the perfect set of conditions which will automatically instigate laughter.

The current theory does not claim to propose the recipe for a perfect set of external conditions which act upon the individual to cause laughter. Rather, the contextual laughter configuration matrix represents the interaction between the experience of

discord, discussed above, and the intrapersonal, social and situational factors which influence the form, function and likelihood of laughter occurring. Every experience of discord is viewed as a potential laughter provoking event. It is the manner in which the individual (informed by the configuration matrix) inhibits, or disinhibits this laughter potential which is the deciding factor as to whether a response to discord is laughter or not. The configuration matrix is representative of intrapersonal and social factors, which alter the laughter behaviour to varying degrees.

8.1.2.1. Intrapersonal Factors

The intrapersonal factors of this matrix have been encompassed within the concept of the *individual laughter range*, which represents an interactive composite of the individual's lifelong learning, personality and traits and how these aspects enhance or reduce the likelihood of laughter occurring. Certain experiences of discord can be said to be excessively disruptive for a particular individual, thereby falling outside the individual's zone of potential laughter activation (reducing the likelihood of laughter occurring), whilst the same experience can fall within another person's zone of potential laughter activation (enhancing the potential for laughter occurring).

Conversely, an experience of discord can be insufficiently disruptive to warrant, not only laughter, but also other outwardly tangible reactive behaviours. This does not mean that the discord was not experienced. Rather, the implication is that the experience of discord is so inconsequential in the given context, that it can be ignored (although it will be implicitly processed). It is of course possible, and likely, that what is not sufficiently disruptive to warrant a reaction of laughter may be processed by other tangible behaviours. The example of swatting a fly from a computer monitor was given in earlier discussion.

If an experience is neither insufficiently disruptive, nor excessively disruptive, then it falls within the *zone of potential laughter activation* - the conceptual psychological 'zone' within which there is increased opportunity for laughter in an individual's laughter range relative to the less likely (but not impossible) occurrence of laughter outside of the individual's typical laughter range. Within this zone, the chances of inhibition of laughter are reduced and the chances of disinhibition are increased.

As alluded to above, a recurring theme in the current theory is the notion that particular levels of discordance can be insufficiently disruptive "so as to make laughter superfluous as a discord management behaviour for a particular individual" (see section 5.2 – Individual laughter range). Indeed, it was proposed in section 5.2.2. Insufficiently Disruptive Experiences, that individual differences in levels emotional reactivity would be relevant in this regard (Peckham et al., 2010; Ruch et al., 2015). I propose that Deckers (1993) weight judging paradigm would be a useful method for measuring

laughter's frequency of occurrence in responsiveness to degrees of discord without the requirement for humour. In this experiment, a series of weights are presented for the participant to compare with one another, with the eventual presentation of an unexpected and highly incongruous weight leading to a variety of surprised reactions, including laughter. Whilst a single participant can only be surprised once with this presentation, the paradigm could be used to garner a generalised minimum degree of discord, above which laughter is more likely and below which laughter does not occur, hence elucidating the plateau for insufficiently discordant experiences.

A second, intrinsically linked theme is that discordance can also be excessively disruptive, to an extent which renders laughter unavailable to the individual for the processing of discord. Furthermore, it was later suggested that given sufficient temporal and emotional distance from the discordant experience, that even what was once and excessively discordant experience can eventually fall within the theoretical 'zone of potential laughter activation' (see section 6.1.2.1. Buffering – Denial or distraction).

The most obvious implication in the latter proposal is that laughter may be a marker of a point at which a progressive leap towards emotional healing has taken place. This knowledge alone might aid in the examination of which factors are present at that time, thereby providing opportunities for the application of therapeutic interventions. However, this proposal would benefit from further examination of laughter in therapeutic settings, as it may also be that such laughter is a marker of a point of discord which the individual is negotiating through active avoidance.

It has also been proposed in the current theory that since the nature of laughter is to negotiate the unexpected, that a rigid individual laughter range would be counterintuitive. It is suggested therefore, that the individual laughter range (and hence, the upper and lower parameters) is not a stand-alone construct. As was introduced early in chapter 3, the current theory takes a multidimensional approach to the understanding of laughter. Consequently, it is proposed that this laughter range (and the interpersonal factors which it represents) is responsive to the environment. Having a somewhat flexible laughter range allows one to be receptive to changes in the environment. This effect is particularly evident in the forthcoming discussion of social factors, which will incorporate the interactive nature of the laughter range with the social setting.

Individual differences play a crucial role in configuring laughter. This point is particularly salient with regards to the interpretations which individuals apply, not only to their own experience of laughter, but also to their experience of other people's laughter. This interactive process helps to shape each individual's own laughter behaviour as they traverse their own developmental path – informed by the behaviour of others. While this can lead to laughter related disorders such as gelotophobia (Ruch & Proyer, 2008) if the conditions of learning are not ideal at an early age, most people do not suffer from an intense fear of laughter. Most people are attuned to the laughter of others and in most cases this laughter is not threatening. Some people may use laughter as a weapon against others, but this did not emerge to any great degree in the current theory. This point may well be a limitation to the current study and this is discussed in more detail in section **8.2. Reflections and Limitations.**

Typical development of laughter skills and hence, the attunement of one's individual laughter range commences in a practical sense at as early as 2 months of age, when an infant begins to laugh (Deacon, 1997). From that point, on the developing child learns from observation and instruction (implicit and explicit) when is an appropriate time to laugh and how to use laughter to negotiate experiences of discord. It seems likely that the quality of caregiving and the extent and quality of attachment to the caregiver would influence the developing child's skills in this regard. It would be of great interest to explore if these factors carry forward through developmental stages, in terms of the manner in which laughter is applied in adult life.

Developmental stages also play a role, as children begin to habituate to previously novel experiences as they age and learn to understand the motivations of others to a greater degree as they mature. It was suggested earlier in the current study that research with regards to childhood habituation patterns could be of interest, in terms of any link to the extent of laughter in children versus that of adults.

Inherent in the concept of the individual laughter range is the notion that that behavioural inhibition and disinhibition are aspects of the behaviour of laughter. Indeed, it has been proposed in the current theory that Pseudobulbar affect, a distressing and socially detrimental clinical disorder which presents as a lack of emotional control in which

pathological uncontrolled laughter occurs in response to stimuli which “are mildly amusing and may have produced a chuckle under normal circumstances” (Ahmed & Simmons, 2013, p. 485), is a powerful example of the consequences of a failure to conform to the configuring powers of the laughter configuration matrix.

Whilst PBA is a disorder, the breakdown in the individual’s control over laughter in social settings offers clues as to how interconnected social structures are to intrapersonal aspects of laughter. Sufferers of PBA become very distressed by their laughter. This distress is indicative of the pressure to conform to specific unspoken rules surrounding laughter. Sometimes however, these rules can have extreme consequences, such as incarceration if you happen to be caught laughing at the expense of a dictator. Evidence, one could argue that people understand that to be laughed at implies that they are judged as flawed by the laugher. Perhaps by extension then, naturally occurring laughter (other than that which is intentionally attracted through humour) should be taken more seriously as an indicator of an audience’s displeasure/confusion/shock/ general discordant feelings towards the source of the discord.

8.1.2.2. Social Factors

As an extension of the concept of the individual's laughter range, it also emerged that there are social laughter parameters which can inform (and hence influence) the individual. Primarily, social factors offer guidance as to where and when is appropriate and conversely, inappropriate for laughter to occur. This typically occurs through social displays of when it is appropriate to laugh, but also through social displays of when it is inappropriate to laugh.

Indeed, there are people in society who take on the role of laughter gatekeepers and these people typically control the appropriateness of laughter in their situational context. This control leads to the manifestation of institutional parameters (e.g. within a school), which, in turn are informed by societal parameters around laughter. Laughter gatekeepers can range from a teacher controlling behaviour in their classroom, to a priest controlling a congregation's laughter behaviour, through permission giving as to when laughter can occur (or not). There is potentially a good deal of positive influence associated with being a laughter gatekeeper. Conversely, there is potential to stifle opportunities for learning and well-being. A better understanding of these informal roles would help to clarify the potential benefits to a conscious and directed approach to managing laughter in certain settings.

Apart from the explicit control of other actors, there are situational and interpersonal expectations surrounding laughter, which also inform the laughter behaviour of the individual. Situational expectations map well on to the established concept of social scripts (Baddeley et al., 2009; Fiske, 1995), in that predictions of *likely* patterns of behaviour which have been socially pre-established, as well as to understandings of environmental contexts in which laughter might either be expected to be a typical and appropriate behaviour (laughter enhancing contexts), or untypical and inappropriate behaviour (laughter inhibiting contexts), as the case may be.

Interpersonal expectations apply to people, rather than places. Laughter provokers can earn the right to make others laugh and as a direct consequence, they have the effect of disinhibiting the laughter in their audience. I term this 'The clownfish effect' in the current theory. Edwards and Martin's (2010) exploration of the act of joke telling is

suggestive of the notion that there are a variety of paths by which one can become adept at making others laugh and building an expectation around that. These paths can include not only rote learning of the jokes of others, but also, the expression of one's own creativity.

Although the topic did not arise from data in the current study, previous research suggests that people hold beliefs of their own level of funniness, which strongly correlate with levels of extraversion (Beins & O'Toole, 2010). One could surmise that such a belief about oneself, coupled with a level of extraversion, would be conducive to fostering similar expectations in others and thereby enhancing the likelihood of the clownfish effect taking place. This is a proposition which may be worthy of further research through analysis of the relationship between levels of extraversion and laughter provocations skills.

In closing of the discussion of the main discoveries with regards to the configuration of laughter is an intriguing and seemingly counterintuitive finding in the current research that positive valance is no more likely to enhance the opportunity for laughter than is negative valance to reduce it. Rather, it was discovered that aroused emotionality in either direction could enhance the likelihood of laughter. Perhaps this finding should not be too surprising if considered in the context of the aforementioned disorder of PBA, in which even small experiences of discord are reacted to with an inappropriate degree of emotionality, which might present as uncontrollable crying or laughter (Ahmed & Simmons, 2013).

This indicates that even in non-pathological cases, one might expect that increased pressures upon this inhibitory control, such as intense emotionality (whether negative or positive valance) could alter one's inhibition of a laughter reaction. Further examination therefore of the role of increased emotional intensity upon inhibitory control and its relationship to laughter would be valuable, both for the understanding of laughter and the notion of emotional lability in a more general sense.

8.1.3. Negotiating discordance with laughter

Laughter is an overt behaviour which signifies the processing of experiences of discord. This processing typically leads to the shifting of states – sometimes cognitive, sometimes emotional and sometimes an amalgamation.

This shifting state may be a pleasant change in an emotional experience, akin to the sense of mirth which Hurley et al describe (2011). Conversely, it may be a laughter provoked discord, such as an unpleasant shift related to embarrassment, ridicule or a sense of being judged. It may also be a new conceptualisation of a previously held, but now revised understanding when laughter marks an invalidation of a previously held belief. This point may be particularly important with regards to opportunities for learning, not just from a pedagogical sense, but also with regards to the management of previously challenging emotions.

The view in the current theory that laugher is a means to negotiate discord arose from a broad scope of data, with particularly strong evidence arising in the behaviour of infants. It is proposed that laughter's earliest manifestations in infancy are learning experiences, during which the infant is taught a new form of self-soothing behaviour. It was proposed earlier that considering the crucial role which caregivers may play in teaching a child how and when to use laughter to their own benefit, that attachment theory may be relevant in this regard.

It would be of great interest to investigate if attachment style is related to the quantity and form of laughter in young children, as a failure to learn this skill could lead to consequences later in life, such as the development of nervous laughter (which may be a misapplication of a poorly learned skill), or indeed an inability to self soothe. With typically developing children, this ability to self-soothe with laughter is carried forward throughout the lifespan to varying degrees of success.

However, whilst some see laughter as a useful means to move on from, or dismiss emotional challenges, others consider laughter in relation to emotionally challenging matters to be symbolic of a level of denial. However, laughter emerged in the current theory as a useful tactic for negotiating distress by challenging these difficult emotions.

Importantly, laughter does not have to be a solution to a discord in order to negotiate it. The term which is used in the current theory as an alternative to the loaded term 'denial' is *buffering*, as it was discovered that just because someone laughs when dealing with a challenging emotion, it does not mean that they are lacking an appropriate level of awareness of the serious of the situation - they just choose to deal with it through laughter.

Interestingly, interviews carried out with different therapists provided clues as to how differing perspective on the timing of an intervention after laughter in a session could potentially lead to very different results. The current study did not specify if laughter in therapeutic settings is beneficial, but previous research has indicated that there may be benefits associated with 'risk interventions' which instigate laughter in the client (Mahrer & Gervaize, 1984).

However, it has been suggested elsewhere that therapist lead attempts at humour in psychotherapy have destructive potential and may actually be dangerous (Kubie, 1994). With this warning in mind, clearly it is essential that risk management is considered with regards to future research in this regard. It is important to note that attempts at humour do not necessarily translate into laughter, which is the focus of the current study – although one might reasonably ask how might a therapist instigate laughter in a therapeutic setting without an attempt at humour?

Of useful consideration with regards to laughter in therapy is the proposal in the current theory that laughing at a previously challenging emotionally charged circumstance may be a process called 'memory reconsolidation' in progress and advancement of knowledge in this arena may be a useful addition to the therapeutic toolkit. It is proposed that finding a way to laugh at an excessively discordant experience may shortcut the healing process.

Potentially, this process occurs when an unlaughable, or perhaps even a previously unspeakable event is brought to light and reframed in a manner which provokes laughter. It may be argued that this is simply humour in action. However, as stated before, humour without laughter is a failed laughter provocation attempt. This failed humour may actually

be detrimental, so any laughter provocation attempts in such cases need to be managed carefully.

It is also my contention that in such cases that it is only when laughter occurs, that the individual is benefitting from any potential benefits. A starting point for a study of this possibility might be a consideration of the proposal made in section 7.2.3. Beyond Distraction, that the phenomenon of memory reconsolidation may be playing an active part in such healing. As coherence therapy (Ecker et al., 2012) is already harnessing memory reconsolidation as a therapeutic intervention, a non-intrusive and consequently low risk study would involve examination of transcripts of coherence therapy sessions in order to isolate laughter events which may be occurring and hence, to evaluate the role which such laughter may be playing in the therapeutic process which is specific to memory reconsolidation.

The concept of buffering challenging emotions also points towards consideration of emotional resilience (Yuzheng, Wei, & Fei, 2016), which may well be a configuring factor with regards to one's ability to laugh in the face of adversity. Conversely, an ability, or a conscious choice to laugh in the face of adversity may strengthen one's resilience. Indeed, it may be that this is an interactive process, with resilience increasing the likelihood of laughter and laughter increasing the likelihood of resilience. This concept may be supported by one of the interviews in the current theory, in which the participant describes that he laughs about everything, and as a result, feels that he doesn't get stressed.

Furthermore, as Yuzheng et al., (2016, p. 726) pointed out in their study of the relationship between mindfulness and emotional resilience, "trait-resilient people are inclined to use coping strategies that elicit positive emotions to regulate negative emotional situations". Furthermore, another connection in the current theory to this concept exists in the proposal that the act of laughing may mimic aspects of mindfulness, in that laughter, like mindfulness draws the laugher into the present moment, thereby freeing one's mind of the burden of past and future concerns.

Further examination of any connection between emotional resilience traits and the tendency to use laughter as a buffering technique is warranted and would be beneficial

with regards to implications, not only for understanding the potential mechanisms involved, but also with regards to unpicking potential for resilience enhancing techniques which could be taught.

While the predominant focus of the current theory was upon the person doing the laughing and the factors surrounding that individual and their laughter, the notion of laughter *provoked* discord is one which arose in the study – that is, the effect which hearing laughter had upon another person. Perhaps somewhat controversially, given that little evidence supporting the use of laughter as an intentional tactic of harm arose (this point is discussed further in the context of limitations), the current theory claims that the harm related to hearing laughter is more likely in the interpretations of such laughter, than in any intended signal.

From that perspective, misinterpretations may occur and may feed in to disorders such as gelotophobia. That said, if such laughter were intentionally used as a tactic to harm another, the current theory would propose that this is a negotiation of power, with the laugher attempting to enhance their power position at the expense of the target of their laughter. The application of the term ridicule is resisted, as this preconceives the intentionality of the laugher, which might stifle the emergence of accurate interpretations in future studies of this phenomenon.

A phenomenon which emerged more strongly in the current theory with regards to intentionally using laughter to manipulate another person was with regards to mood enhancement. As had been explored earlier, positive valence is not a necessary or sufficient precursor to the instigation of laughter. Nor is negative valence a reliable inhibitor of laughter. Rather, it emerged that transient emotional states can be overridden quite readily by laughter and that this property of laughter is recognised and put in to practice.

A developmental path was mapped in this regard, with very young children appearing to lack the cognitive and emotional skills required to instigate laughter for purposes other than for their own gain. As they develop, so too do the skills required to provoke laughter in others. Whilst the current theory was focused upon discovering overall patterns, as opposed to verification of fact, more research is required to advance the notion of the

development of laughter provocation skills. Mapping this path in a longitudinal study and correlating such behaviour with personality would be a fascinating exercise, which would have wider implications beyond the study of laughter and into the wider field of developmental psychology.

Another point which arose with regards to mood enhancement through laughter is the phenomenon of purposively laughing while alone – in particular, through the use of minimally adapted 'laughter yoga' techniques (Kataria, 2010b; Rivest, 2012). There is an evident research interest in the application of laughter yoga and similar techniques being applied in group and general therapeutic settings (Bennett et al., 2014; Dolgoff-Kaspar, Baldwin, Johnson, Edling, & Sethi, 2012; Mora-Ripoll, 2011; Mora-Ripoll, 2010b; Proyer, Ruch, & Rodden, 2012; Shahidi et al., 2011). The findings have been mixed, so it is of particular interest as to whether laughing intentionally while alone (in the absence of humour) would unearth any benefits. If so, the practice could suit many people who do not have the physical capacity to attend laughter yoga groups, or indeed, those who do not wish to laugh out loud in a group setting, in the absence of any humour, as this act can enhance, rather than reduce stress (a note of personal experience from the researcher).

It was noted early in the theory that the negotiation of discord does not only apply to semi-reflexive laughter, but also to goal-oriented laughter, in the sense of the experience of discord being the gap between one's current situation and the desired outcome for that situation. I term this the negotiation of secondary discord.

In the discussion of the individual laughter range, (**section 6.2**), attention was drawn to the fascinating work of Bonin et al (2014) and their investigations of the temporality of laughter mediated topic change in discourse. I made the suggestion that this is a form of goal-oriented laughter in action, which represents the act of negotiating the complexity of discourse through the use of laughter – even in the absence of humour. An interesting element to consider in this regard therefore, would be aspects of personality which might correlate with laughter mediated topic change.

Humour styles have already been researched in terms of the associations to mental health (Cann & Collette, 2014), emotional intelligence, social competence (Yip & Martin,

2006) and personality (Frewen et al., 2008), with relationships between particular humour styles and personality being evident. The relationship between humor creation ability and well-being has also been investigated, with this ability not being particularly relevant to well-being (Edwards & Martin, 2010).

However, I propose that laughter at topic change is not necessarily a reflection of humour creation ability or sense of humour (although this too would be worthy of investigation) and that successful topic change mediated in this manner may be reflective of a different subset of traits. Whether this subset is indicative of a submissive, or assertive approach to conversation for instance would further illuminate the understanding of goal-oriented laughter in terms of how it operates and who tends to use it. Such research may also offer a pathway to investigating how one comes to develop such a skill, not only in discourse, but in a more general sense, as I suggest that there is much overlap between apparently semi-spontaneous and goal-oriented laughter.

8.2. Reflections and Limitations

Given that my field of interest is psychology, I would be denying much of my learning on the subject, if I were to insist that the current study was incontrovertibly free of bias and that my preconceived notions were unequivocally bracketed for the duration of the study. Whilst I made every effort to bracket prior knowledge of the topic of interest, along with any latent biases, given the unconscious processes which influence one's behaviour in every other aspect of life, this is a challenging goal.

Admittedly, I began with a scepticism of the notion of 'laughter as medicine'. As was mentioned earlier, I had previously undertaken a M.Sc. in applied psychology and a great deal of the focus was around therapeutic approaches to mental ill-health and psychological disorder. This cultivated a tendency to be cynical about 'cures' or treatments which did not have robust scientific backing. When I came across 'laughter yoga' when listening to a podcast (Van Nuys, 2011) and I read of the claims which were associated with laughter yoga, I was cynical. Not only was the inventor of laughter yoga claiming that laughter could cure many illnesses, but he was also claiming that so too could 'fake laughter'.

This scepticism of the concept of 'laugher as medicine' also stemmed from personal experience of an acquaintance who suffered from anxiety and debilitating depression, yet laughed a good deal. Given that laughter is ubiquitous and that I had experience which contradicted laughter's apparent healing powers, I wanted to investigate what else laughter must be doing. However, there is the counterbalance that this suspicion of laughter's efficacy as a healing power inoculated me as researcher from a desire to 'prove' that very notion.

With these points in mind, I wish to present reflections upon the process of undertaking the research and discuss the limitations which arose in the course of the progression.

8.2.1. Doing Grounded Theory

I have already discussed the epistemological considerations which influenced the methodological choice. In that discussion, I explained that pragmatism is as much a guiding influence as is one's predisposition to a particular approach to research.

Having shared office space with several PhD student colleagues who were finalising their write-ups during the early months of my first year, I was witness to a great deal of stress and discomfort which they experienced when struggling with statistical models which they never expected to be working with. Little did I know however, that learning grounded theory is just as challenging as learning a new statistical model. Grounded theory demands a lot of the researcher, including an implicit expectation that one must be able to hold massive amounts of information in mind, in order to see patterns in the data and analyse that data in a meaningful way (although Glaser would argue that memoing done correctly preserves these thoughts for you). I would argue that no matter how efficient and detailed the memoing, one still has to remain thoroughly focused and dedicated in the search for concepts which overlap, intersect and produce a cogent theory.

Glaser speaks of a 'freedom' which comes from not having to rely upon extant literature to justify the formation of a research question (Glaser, 1998). Indeed, this freedom was palpable after having spent my first months in the PhD programme coming to terms with the fact that I could not see reasonable definition of laughter jumping out from the literature and wondering how I must operationalise a controlled study of that which I could not define. Grounded theory offered me the freedom to put aside the assumptions which were being made about a phenomenon which defied an agreed definition. It seemed to me that laughter could be a lot more complex than I first thought and I initially welcomed the freedom to explore that in a broad sense.

However, as the study progressed, rather than narrowing, it expanded and I quickly became overwhelmed with the multiple tasks of gathering data whilst simultaneously analysing it and using the emerging concepts to inform where to go next with the research. In an attempt to regain control of the process, I attended an online grounded theory workshop, at which Dr. Barney Glaser (co-creator of grounded theory) was a

mentor. I had the opportunity to describe my work to him and while he was positive about the research, he expressed a concern that I would find it difficult to 'find the main concern' when researching a phenomenon like laughter. That indeed was the case for quite some time, until I finally realised that the 'concern' which everyone shared was not a conscious one, but an unconscious one – how to manage experiences of discord. It eventually transpired that laughter is a discord management behaviour. Once this main concern was recognised, the process became more manageable.

To novice researchers considering the approach, I can only say that at first it is confusing, but suddenly, all becomes clear. Glaser, rather passionately, calls this eureka moment a 'drugless trip' and the period just before this moment 'depression' (Glaser, 1978, p. 23). Is this hyperbole? I can only suggest, having attending an online workshop with him, that Glaser is a straight talker. Take from that what you wish.

8.2.2. Trustworthiness of the theory

Given that the grounded theory methodology is multivariate in its approach, one can be confident that the theoretical sampling and constant comparison method helps to counteract biases which may be latent in the researcher's approach. Given the variety of data and sources of data which emerged throughout, skewing the theory in one direction would have been pointlessly challenging and more complex than presenting the theory as it emerged. It would also have become obvious to the reader. I would like to think that having concluded the study, in reflection, some of my latent biases were undermined, rather than confirmed. This study was rigorous, in that it has achieved the four criteria of 'fit', 'relevance', 'workability' and 'modifiability' - tests of trustworthiness put forth by Glaser (1998).

Fit

Does the concept represent the pattern of data it purports to denote?

The constant comparative analysis process has ensured that the concepts in the current theory are not representative of one or two ideas. The concepts are grounded by a variety of sources of data and only those patterns which robustly occurred in the data were combined to form concepts.

Relevance

Do the emergent concepts relate to the true issues of the participants in the substantive area?

Entering the research without preconceived codes and concepts prevents one from forcing ideas on the data. Rather, the data suggests the concepts. When it is discovered that a main issue (the experience of discord in this case) is continually processed (in this case through the act of laughing), and all other categories link to this concept, then one can be sure of the relevance of the processes under examination.

Workability

Does the core category account for most of the variation of behaviour in the area under study?

Discordant experiences were reliably found to occur in relation to laughter. The variation in the behaviour of laughter accounts for the discovery that laughter negotiates multiple forms of discord. The concept that laughter processes discord is a workable proposition which can be related closely to the broad variation of behaviour under study.

Modifiability

Is the theory flexible enough to incorporate modifications in response to new data, or new concepts if they emerge?

Changes to the understanding of laughter could be updated by new data and still fit within the current theory. A theory is not ‘right’ or ‘wrong’, it is a series of propositions which are amenable to change if new data arises. For instance, if it were suggested that in a particular (hypothetical) culture, all laughter was representative of aggression, not joy, then the theory would explore what the nature of the source of aggression was and ask could it be accounted for as a discordant experience. Findings could readily be integrated within the current theory.

8.2.3. Limitations

Perhaps the most salient point which could be put forward as a limitation to the study is the conscious decision which was taken from the outset to ensure that the current theory would be a study of laughter and not a study of humour. Great efforts were taken in order to avoid a conflation of the two. However, it could reasonably be argued that the two are inextricably linked and to study one without the other is akin to studying cognition without consideration of emotion.

However, Martin (2001) has uncovered that in many cases it seems that the two distinct subjects of humour and laughter are often mistakenly treated as one in the same in research. This is an occurrence which Martin believes leads to a variety of methodological issues, including the erroneous drawing of interpretations about laughter from studies in which laughter was not even recorded. I attempt to avoid that problem here.

Furthermore, it had been recommended by previous researchers that the two should be treated separately in order to develop an understanding of each in its own right (Devereux & Heffner, 2007; Gervais & Wilson, 2005). As was discussed in the introductory chapter, both laughter and humour can be and often are independent of each other. To preserve the focus upon laughter, the theory incorporated discussion of humour only when it served the purpose of theory development.

Concern about another potential limitation which may have arisen, stems from the counterintuitive nature of the findings that:

A) Ridicule did not emerge as being particularly important in the theory
B) Transient emotional state did not emerge as being a strong configuring factor

With regards to A, ridicule is an important phenomenon, not to be trivialised. It is not the intention to promote such a notion. Indeed, many lives have been affected and on occasion lost as a consequence of the hurt which ridicule can cause. However, it did not transpire that there is a causal link between the act of ridicule and the phenomenon of

laughter. Certainly, the two can co-occur, but with the starting point of examining laughter in all of its forms and functions and narrowing the study down to those which emerged as being most salient, it was decided early not to dwell upon laughter typologies. If I had, I might also be justifying why I didn't study sarcasm or irony for instance, for these two can add extra meaning to the act of laughing. If the starting point of the research had been a theory of ridicule, then I might have found that laughter is a property of that behaviour.

Point B, that transient emotional state did not emerge as being a strong configuring factor is perhaps even more challenging. Common sense suggests that if one is sad, one is less likely to laugh and if one is happy, one is more likely to laugh. Yet, despite concerted efforts to scour the data in search of incidents which could support this notion, little was found. As proposed in the theory, data was strongly in support of the notion that laughter could shift transient emotional states. In other words, laughing can help one to feel better.

Perhaps this is laughter doing what laughter is supposed to do and the direction of the correlation between happiness and laughter has been under-represented, in that laughter may go some way towards shifting emotions from negative valence towards positive valence. However, I would urge caution in this regard, as the implication may simply be that happiness is not required for laughter to occur.

I do believe however, that this is a vindication of the grounded theory method, in that the concepts were not forced into the theory on the basis that they 'should' be in there. However, it is also possible that despite the rigorous data collection and theoretical sampling method of grounded theory, I somehow missed these points in the data.

8.2.3.1. Theoretical Saturation

The final concern which arose is methodological. The concept of 'theoretical saturation' is an interesting one in grounded theory, as it appears to challenge the researcher to examine a concept to the point that no new data is being found with regards to that concept. From my experience, this is a challenging and one might argue - cruel task to impose upon oneself, as there is little (perhaps nothing) in this world about which everything is known. Indeed, I believe that it was my own concerted efforts to saturate every aspect of the main concepts of the theory that caused the process to extend much further than had originally been anticipated.

From that perspective, I suggest that the concept of saturation is one which any novice researcher considering using grounded theory becomes well informed in. Not understanding this aspect of the method may lead one to gather massive amounts of data, which may turn out to be unnecessary at best and may overwhelm and harm the researcher in the worst-case scenario. With the benefit of hindsight, I would advise that rather than think of the goal of theoretical saturation as implying that all possible data sources have been garnered to the maximum degree, that one acknowledges saturation when the need to continually revise one's primary concepts subsides because you have become comfortable with the rigour of what you have found.

8.3. Conclusion

Laughter is a representative term for a multidimensional and dynamic group of behaviours which are socially conceptualised as the single behaviour ‘laughter’. Laughter is a multistage process which serves the purpose of negotiating experiences of discordance. The process traverses three main stages:

1) Discord is experienced
2) Discord is contextualised and laughter is configured
3) Laughter negotiates the experience of discordance

The degree of discord which laughter can help to negotiate is dependent upon the individual’s own range for laughter. Some experiences of discord are excessively disruptive for the individual, so as to preclude laughter. In such cases an alternative reaction to laughter, such as fear for example, is more appropriate. Conversely, some experiences of discord are so diminutive as to be inconsequential as regards overt behaviours like laughter and they may be processed through other actions, or not at all.

There are two encompassing terms for laughter which represent the predominant forms – semi-reflexive and goal-oriented. Laughter may appear to be spontaneous, but it is configured intrapersonally and socially, so it is said to be semi-reflexive in nature. It is not a true reflexive response, which is devoid of social configuration. Laughter can also be volitionally emitted at any time, for any reason. Such laughter is said to be goal-oriented in that it represents a gap between the presenting situation and the outcome which the laugher aims to achieve.

Laughter is heavily configured by lifelong learning, social forces and individual differences. This configuration process is ongoing and an individual’s typical laughter range, or propensity for laughter can be subjected to external forces such as situational and interpersonal expectations, which can inform the individual when it is appropriate to laugh.

When people laugh, they are negotiating discord of some degree through that laughter. Discord can range from the mismatch between a joke's set up and punchline, or it can be as serious a matter as the buffering of the challenging emotions surrounding childhood abuse.

Laughter may be implicated, not only in the buffering of challenging emotions which the individual may be experiencing in the moment, but also in the reconsolidation of memories when previous challenging experiences are recalled in conjunction with laughter.

Understanding laughter on a deeper level can provide deeper insights with regards to aspects of self-soothing, attachment, mood enhancement of others and it may also offer therapeutic, as well as pedagogical benefits. Therapeutic benefits may include the intentional buffering of challenging emotions. Client laughter may offer therapists meaningful 'markers' in sessions, to which they can return at an opportune time. However, great care must be taken in this area, as there is potential for harm if laughter is not researched and managed properly in therapy.

Pedagogical opportunities include enhancement of learning environments in addition to laughter representing similar markers to those in therapeutic sessions. In a teaching setting, laughter can signify a moment of discord in the child's learning experience, which may warrant further investigation by the teacher.

A wider societal and professional understanding of laughter presents great opportunities for the enhancement of well-being, relationships and knowledge through the subtle use of laughter as a supportive tool. Many will present laughter as an elixir for life – however, the current theory does not propose anything so grand. Rather, the primary message to be drawn is that laughter may be obvious in its presentation, but it is subtle and somewhat misunderstood in its workings.

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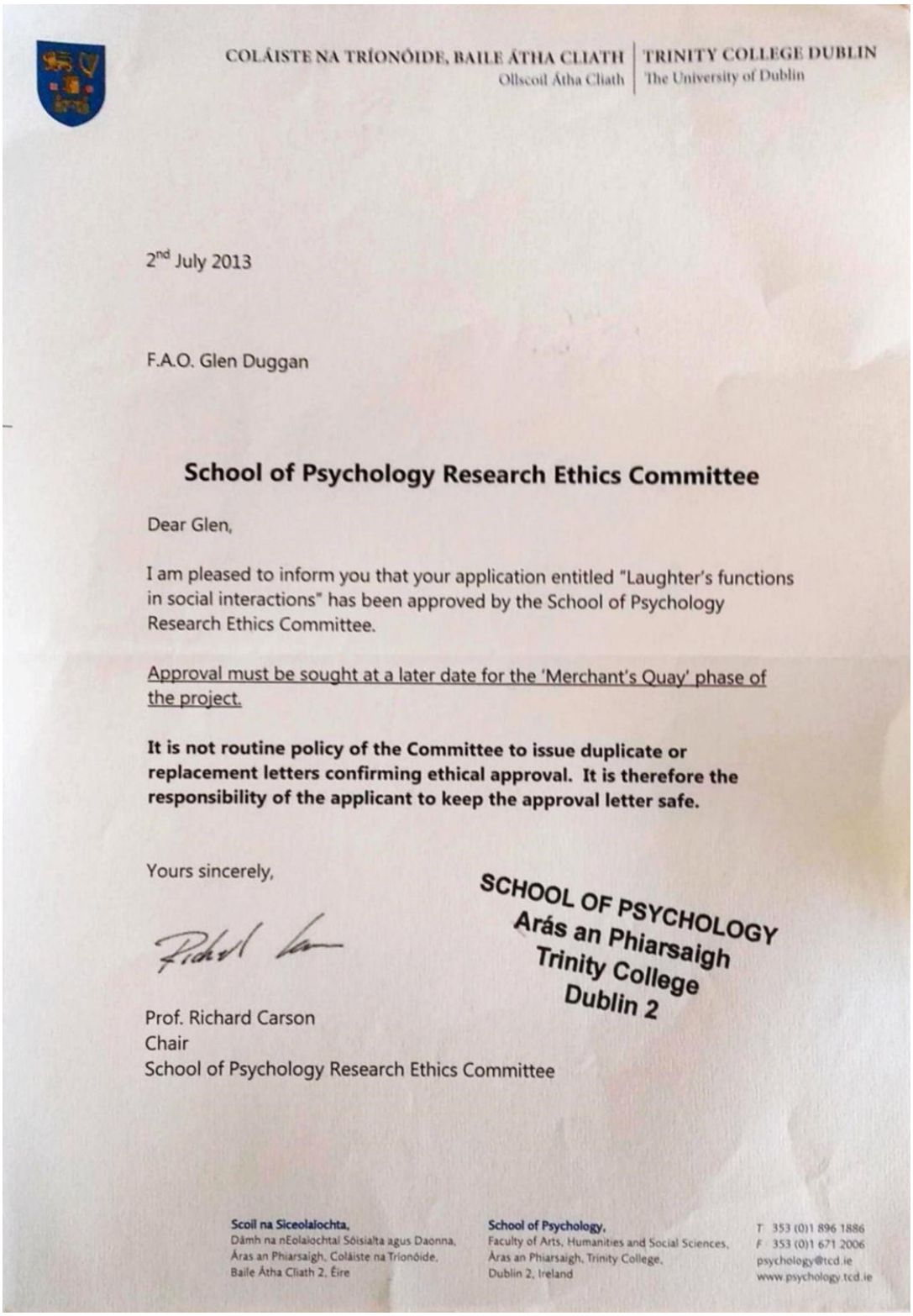
10. Appendices

10.1. Appendix 1: Ethical Approval



COLÁISTE NA TRÍONÓIDE, BAILE ÁTHA CLIATH | TRINITY COLLEGE DUBLIN
Ollscoil Átha Cliath | The University of Dublin

2nd July 2013

F.A.O. Glen Duggan

School of Psychology Research Ethics Committee

Dear Glen,

I am pleased to inform you that your application entitled "Laughter's functions in social interactions" has been approved by the School of Psychology Research Ethics Committee.

Approval must be sought at a later date for the 'Merchant's Quay' phase of the project.

It is not routine policy of the Committee to issue duplicate or replacement letters confirming ethical approval. It is therefore the responsibility of the applicant to keep the approval letter safe.

Yours sincerely,

SCHOOL OF PSYCHOLOGY
Arás an Phiarsaigh
Trinity College
Dublin 2

Prof. Richard Carson
Chair
School of Psychology Research Ethics Committee

Scoil na Síceolaíochta,
Dámh na nEolaíochtaí Sóisialta agus Daonna,
Áras an Phiarsaigh, Coláiste na Tríonóide,
Baile Átha Cliath 2, Éire

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Faculty of Arts, Humanities and Social Sciences,
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psychology@tcd.ie
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10.2. Appendix 2: Recruitment Poster

Laughter

Laughter's functions in social interactions

- **Why do people laugh at things that aren't funny?**
- **Why do people laugh at inappropriate times?**
- **What is the function of laughter?**
- **Is laughter really 'The Best Medicine'?**

If you have asked yourself these, or other questions relating to laughter, or perhaps you just like to laugh a lot, then you (or you and a group of friends) might like to take part in my research.

I'm particularly interested in researching is what are the functions of laughter and how our everyday lives are influenced by our experiences of laughter, whether this is alone, in a social context, or perhaps even when sending a text or playing an online multiplayer game.

I would hope to do this through audio recorded interviews and/or focus group discussions and subsequent analysis of the interviews. I believe that that the information gathered will not only provide a deeper understanding of the phenomenon of laughter itself, but it will also lead to a better understanding of many typical social interactions, in which laughter is implicated but is not fully understood in terms of what functions it serves.

If you would be interested in taking part by giving an hour or so of your time to have a chat about laughter, please get in touch.

(If you are an undergraduate in the TCD School of Psychology, research credits will be available)

Glen Duggan
School of Psychology,
Trinity College, Dublin
duggangl@tcd.ie
087-2656514

10.3. Appendix 3: Twitter Recruitment

Appendix 4: Facebook Recruitment

10.4. Appendix 5: Online Information Page

Title of Study: Laughter's functions in social interactions

Thank you for taking the time to familiarise yourself with my research study. What I am particularly interested in researching is what are the functions of laughter and how our everyday lives are influenced by our experiences of laughter, whether this is alone, in a social context, or perhaps even when consuming media. I would hope to do this through the use of this website's forums, the consequential discussions and the subsequent analysis of the discussions. I believe that that the information gathered here will not only provide a deeper understanding of the phenomenon of laughter itself, but it will also lead to a better understanding of many typical social interactions, in which laughter is implicated but is not fully understood in terms of what functions it serves.

Quotations from the forum discussions may be used in the research report, but your anonymity will be maintained throughout. Likewise, should the research, or aspect of it be used in subsequent journal articles, further research, publications, or other academic presentations, your identity will remain confidential. All data collected will be stored securely, in accordance with the Data Protection Act, 1988 (Amendment 2003). Once the research is completed, the researcher reserves the right to cease offering the forum facility and the electronic records of the forum discussions can be deleted. Transcripts from the forums will be printed and stored securely offline for later analysis or auditing purposes. Under the freedom of information act 2003, as a contributing participant, you will be entitled to obtain the results of the study, should you so wish. The research will be carried out in accordance with the Psychological Society of Ireland best research practice principles.

If you agree to participate in the study, you will be free to withdraw from it at any stage, with no consequences. If you decide that you would like to withdraw your participation, before, during or after the interview/focus group discussion, I will simply re-move the data collected in your case from the research. Please consult and print more information at THIS LINK, titled 'Debrief' should you choose to withdraw. Furthermore, if you find that you have any concerns or issues regarding your participation in the research, please feel free to contact me. Alternatively, you can contact my research supervisor, Dr. Kevin Tierney. Our contact details are provided below.

I would like to thank you in advance, should you choose to participate by completing the consent form and I look forward to hearing from you on the forums.

Yours sincerely

Glen Duggan

Glen Duggan (Researcher)
School of Psychology,
Aras an Phiarsaigh,
Trinity College, Dublin

Dr. Kevin Tierney (Research Supervisor)
School of Psychology,
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email: duggangl@tcd.ie

PH: 01-8962609
email: tiernen@tcd.ie

10.5. Appendix 6: Online Consent

This page contains crucial information about consenting to participate in the research. Please read it in full before consenting to participate.

Participant Consent Information

Please read this information and check/tick the relevant boxes on the consent form below if you consent to participate in the study.

Title of Study: A Grounded Theory study of Laughter

Declaration of Participant:

I confirm that I have familiarised myself with the Participant Information Page for this study and as such, the nature and purpose of this study have been satisfactorily explained to me. I understand that I can seek further clarifications at any time from the researcher, Glen Duggan and/or his research supervisor, Dr. Kevin Tierney, whose direct contact details are available by request via the CONTACT FORM.

I give consent to the recording and analysis of my comments/interviews and/or group discussions with the researcher and/or fellow forum participants, for the purposes of inclusion in the researcher's PhD thesis. I also give consent for the transcribed comments/interview/discussion, or parts thereof, to be included in future journal papers, publications or presentations. I am aware that I will not be identifiable and that all information will be treated with the strictest confidence. All printed data will be stored safely in a locked cabinet and any electronic data collected, once removed from the website forum after its conclusion as a research tool, will be stored in an encrypted file. In accordance with Trinity College's data storage policy, all data will be kept for 10 years.

Under the Freedom of information act, I understand that I am entitled to a copy of the study's findings upon request. I understand that I am free to withdraw my participation at any time prior to the publication of the thesis and that there will be no consequences to doing so. Should I choose to withdraw, all of my data will be removed from the forum, the analysis and the study overall.

By checking/ticking the boxes on the Consent Form, I confirm that I freely agree to take part in this research study.

Please print and retain a copy of this 'Giving your Consent' Information page, along with the Participant Information page for your future reference as this is your digital signature

☐ I consent

10.6. Appendix 7: Website Privacy Policy

Section 1. Introduction

At laughterresearch.com, which is a website dedicated to academic research, we respect the right to personal privacy and our obligations under the Data Protection Acts 1988 and 2003. This Privacy & Conduct Policy outlines how we deal with any personal data you provide to us while visiting this website, or as a registered user. If you are not happy with this Website Privacy Statement you should not use this website or partake in the research. This policy will also outline the conduct which is required for continued participation. By visiting this website, you are accepting the terms of this privacy statement. However, participation in the research will require completion of the consent form.

Section 2. Types of information collected. Personal Data

This is data that identifies you or can be used to identify or contact you and includes information such as your name, address, sex, email address, birth date, marital status, occupation and salary range for example. It is an obligation of participation in this research that you do not disclose any such information on the website or associated forums. Upon agreeing to participate in the research described on this website, we will issue you with an anonymous username. This username must be used when you make posts on the forum pages. Breach of this request to remain anonymous will result initially in the implicated post/posts being deleted and multiple breaches will result in removal from membership of the associated forum and the cessation of your participation in the research. Adequate warnings will be provided, in order to allow for genuine mistakes. We will maintain a written file, linking your username to your real name, in a secure location offline. This is for the purposes of facilitating the removal of your data from the research should you make such a choice, or if the researcher or School of Psychology, Trinity College, Dublin deems it to be necessary. Your data and comments will remain anonymous and confidential. It is a requirement of partaking in the research that you maintain the confidentiality of other user's comments outside of this website's forum discussion.

Non-Personal Data

Like many websites, we gather statistical and other analytical information on an aggregate basis of all visitors to our website. This Non-Personal Data comprises information that cannot be used to identify or contact you, such as demographic information regarding, for example, user IP addresses (where they have been clipped), browser types and other anonymous statistical data involving the use of our website.

We use the Non-Personal Data gathered from visitors to our website in an aggregate form to get a better understanding of where our visitors come from and to help us better design and organise our website.

Cookies

This website uses "cookie" technology. You may refuse the use of cookies by selecting the appropriate settings on your browser. A cookie is a little piece of text stored by the browser on your computer, at the request of our server. We may use cookies to save your personal preferences so you do not have to re-enter them each time you connect to our website – our cookies are not available to other websites. Our cookies will record the number of user sessions on the site and to track the number of users who return to the site. You are always free to decline our cookies, if your browser permits, or to ask your browser to indicate when a cookie is being sent. You can also delete cookie files from your computer at your discretion. Note that if you decline our cookies or ask for notification each time a cookie is being sent, this may affect your ease of use of this website.

Section 3. Disclosure of Information to Third Parties

We will not disclose your Personal Data to third parties unless you have consented to this disclosure, or unless we believe in good faith that we are required to disclose it in order to comply with any applicable law, a summons, a search warrant, a court or regulatory order, or other statutory requirement.

Section 4. Deleting Your Account and Withdrawing from the Research

You may contact us, quoting your allocated username to inform us of your wish to withdraw from the research at any point, and in accordance with our obligations under the Data Protection Acts 1988 and 2003 we will delete your data accordingly, with no consequences or penalties for you. We will not hold your data for any longer than is necessary for the purpose of the research. More information is available at THIS LINK.

Section 5. Changes to the Website Privacy Policy

Any changes to this Website Privacy Statement will be posted on this website so you are always aware of what information we collect, how we use it, and under what circumstances, if any, we disclose it. If at any time we decide to use Personal Data in a manner significantly different from that stated in this Website Privacy Statement, or otherwise disclosed to you at the time it was collected, we will notify you by email, and you will have a choice as to whether or not we use your information in the new manner.

Section 6. Conduct Policy

Participants must maintain an acceptable level of respect for fellow participants. Derogatory, potentially libellous or defamatory remarks will be removed and may lead to a revoking of offending participant's membership of the forums. Complaints regarding the conduct of fellow participants must be directed to info@laughterresearch.com

Any queries or comments about this policy should be sent to info@laughterresearch.com

Please note that any site that you may connect to from here is not covered by this Privacy Policy.

10.7. Appendix 8: Interview Information Sheet

Title of Study: Laughter's functions in social interactions

Thank you for taking the time to familiarise yourself with my research study. What I am particularly interested in researching is what are the functions of laughter and how our everyday lives are influenced by our experiences of laughter, whether this is alone, in a social context, or perhaps even when consuming media. I would hope to do this through audio recorded interviews and/or focus group discussions and subsequent analysis of the interviews. I believe that that the information gathered will not only provide a deeper understanding of the phenomenon of laughter itself, but it will also lead to a better understanding of many typical social interactions, in which laughter is implicated but is not fully understood in terms of what functions it serves.

Quotations from the interviews/focus group discussions may be used in the research report, but your anonymity will be maintained throughout. Likewise, should the research, or aspect of it be used in subsequent journal articles, further research, or other academic presentations, your identity will remain confidential. All data collected will be stored securely, in accordance with the Data Protection Act, 1988 (Amendment 2003). Under the freedom of information act 2003, you will be entitled to obtain the results of the study, should you so wish. The research will be carried out in accordance with the Psychological Society of Ireland best research practice principles.

If you agree to participate in the study, you will be free to withdraw from it at any stage, with no consequences. If you decide that you would like to withdraw your participation, before, during or after the interview/focus group discussion, I will simply re-move the data collected in your case from the research. Furthermore, if you find that you have any concerns or issues regarding your participation in the research, please feel free to contact me. Alternatively, you can contact my research supervisor, Dr. Kevin Tierney. Our contact details are provided below.

I would like to thank you in advance, should you choose to participate and I look forward to hearing from you, so we may arrange a suitable appointment.

Yours sincerely,

_____

Glen Duggan

Glen Duggan (Researcher)
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Please retain a copy of this information sheet for your future reference

10.8. Appendix 9: Interview Consent Sheet

Please sign if you consent to participate in the study.

Title of Study: Laughter's functions in social interactions

Declaration of Participant

I confirm that I have received and familiarised myself with the Participant Information Sheet for this study. The nature and purpose of this study have been satisfactorily explained to me. I understand that I can seek further clarifications at any time from the researcher, Glen Duggan and /or his supervisor, Dr. Kevin Tierney, whose contact details are provided below. I give consent to the audio recording and transcription of my interview and/or group discussion with the researcher, for the purposes of inclusion in the researcher's PhD thesis. I also give consent for the transcribed interview/discussion, or parts thereof, to be included in academic papers, publications or presentations.

I am aware that I will not be identifiable and that all information will be treated with the strictest confidence. The data will be stored safely in a locked cabinet and any electronic data collected will be stored in an encrypted file. In accordance with Trinity College's data storage policy, all data will be kept for 10 years.

Under the Freedom of information act, I understand that I am entitled to a copy of the study's findings upon request. I understand that I am free to withdraw my permission at any time and that there will be no consequences to doing so. I confirm that I freely agree to take part in this research study.

Participant's Name _____ Researcher's Name_____

Participant's Signature _____ Researcher's Signature_____

Phone Number _____ Phone Number_____

Date _____

Date_____

Contact Details:

Glen Duggan (Researcher)

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Please retain a copy of this consent form and the information sheet for your future reference

10.9. Appendix 10: Debrief Information

Title: Laughter's functions in social interactions

I would like to sincerely thank you for your co-operation by means of participation in my research, whether you participated online, or in an interview setting. I envisage that the outcomes of the study will provide an enhanced understanding of the phenomenon of laughter as well as laughter's roles in everyday interactions.

Please remember that even at this point, if you wish to change your mind and would like to withdraw your participation, you are perfectly entitled to do so, with no consequences. I will simply remove the data collected in your case from my work prior to writing the thesis. Furthermore, if you find that you have any concerns or issues resulting from your participation in the research, please feel free to let me know. Alternatively, you can contact my supervisor, Dr. Kevin Tierney. Both sets of contact details are provided below.

In the event that you feel that you have been inadvertently negatively affected or upset by topics discussed in the interview process and/or focus group discussion, or by any other aspects of the research and you feel that you require further psychological support, please contact your GP for a referral to a mental health specialist. Alternatively, you may wish to contact a support agency, such as The Samaritans on 1850 60 90 90.

I wish you all the best for the future.

Yours sincerely,

_____

Glen Duggan

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