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Wallace Chafe
The Importance of Not Being Earnest – The Feeling behind Laughter and Humor
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This 167-page book is divided into 13 chapters with an index and 6 pages of references. Part 1 of the book has four chapters that focus on laughter, part 2 has six chapters that focus on the underlying feeling and different aspects of humor, and part 3 has three chapters that review the findings and compare the author's approach to those of other writers. Humor and laughter are closely intertwined and have been examined by numerous scholars from a variety of disciplines. This book is unique in that it combines an in-depth acoustic analysis of laughter with a description of humor (mostly spoken/oral) and gives a theoretical perspective on emotional experiences that are associated with laughter and humor. This approach reminds us that human vocal behavior is just the tip of the iceberg and is the overt expression of complex communicative and noncommunicative processes and related cognitive and contextual components. The analyses of the data, explanations, and examples are written with such clarity that readers from different disciplines can easily follow the text and understand the detail. The balance between being readable and having sufficient scientific and evidence-based depth also means it is suitable for a wide audience. The chapters on humor in this book include excellent examples of planned jokes and it is refreshing that Chafe does not shy away from introducing jokes that include taboo topics. The reality of everyday humor is that it creates an opportunity to play with ambiguous words and concepts related to themes such as sex, bodily functions, and religion that would otherwise not be acceptable in conversational exchanges or narratives.

A major strength of this book is that the laughter data used for analyses is spontaneous and conversational and there are numerous different examples. There is a link to 49 sound bites that accompany Chafe's book (http://www.linguistics.ucsb.edu/faculty/chafe/sounds.htm). In my experience it can be very time-consuming and sometimes difficult to select and extract laughter from conversation for acoustic analyses. Nevertheless, using spontaneous laughs, rather than artificially elicited laughs by asking someone to laugh out of context, avoids the risk of obtaining atypical laugh characteristics for that person. The examples highlight the wide variability found by Bachorowski et al. [2001] in their multiple studies.

The study of laughter has been challenged for some time by the use of varying and inconsistent terminology as summarized by Ruch and Ekman [2001]. Chafe describes each term including laughter syllables, laugh pulses, and laugh events and clearly defines his preferred terminology as 'pulses' and rather than a laughter 'bout' or 'event'. For the whole laugh or the whole laugh and associated events he just uses 'laugh'. This detailed explanation of laughter-related terms may assist different researchers in the field who want to be consistent in the future. 'Laugh pulses' or what have also been termed 'laughter events' were used by Nwokah et al. [1993] to classify child laughter into different types such as 'comment' (single event), 'chuckle' (double event), and several types of 'rhythmical' laughs (3 or more events). This book does not address the possibility of this type of categorization of laughs. Chafe also does not refer to the lay terms for different types of laughter such as chuckling, chortling, giggling, cachinnating (laughing loudly and in an unrestrained manner) and guffawing (laughing boisterously). Giggling, for example, is thought to be characterized by a higher pitch and accelerated rhythm than other laughter types [Glenn, 2003]. Campbell et al. [2005] were able to distinguish four types of laugh in telephone conversations by Japanese speakers. These laugh types were automatically detected by the use of Hidden Markov Models with a success rate of 75%. Depending on social context, personality, and culture there may be individual preferences for the type of laughter produced, especially related to duration and intensity. Variations in individual preferences for laugh duration were found in our data on the simultaneous use of

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laughter and speech by mothers to their children [Nwokah et al., 1999]. Individuals also use a number of different laugh patterns [Provine and Young, 1991] and additional longitudinal studies may confirm this related to personality and controlling for the situation.

One of the striking features of such variability in laughter is individual laughter signatures and there is some limited mention of this in chapter 3 on varieties of laughter. Laughter signature refers to characteristics of laughter that are unique to the person so that they are recognized just by hearing their laughter. A colleague of mine teaching in a medical school was given a parting gift when she left that university and was moving to another. It was an audiotape of a sample of laughter from each of her close academic colleagues. She did not need their names to recognize them by their laughter. There appear to be unique characteristics of the acoustic and prosodic features of individual laughter patterns hence the creation of characters in TV dramas and comedies with intentionally obnoxious or unusual laughs. Black [1984] stated that it was the rhythmic sequence and frequency of expiratory and inspiratory excursions that determined an individual laughing style. Although Devereux and Heffner [2007] cite Milford's [1981] work that laughter produced by different persons in the same context is remarkably similar and individual variations may not be so obvious when examined this way, I would argue that laughter is acoustically distinct at the individual level. Chafe provides a range of contrasting laughs to illustrate variability in laughs but does not highlight any characteristics that might be specific to one person. This may be an area for future research on laughter.

Chafe continues by discussing 'laughing while speaking' in chapter 4. This is one of the most important chapters, in my opinion, as it involves the analysis of examples of co-occurring laughter and speech. Limited research [Kohler, 2008; Trouvain, 2001] has been conducted on what I term 'speech-laughs' and, prior to analyses of maternal child-directed laughter by me and my colleagues, it was previously regarded as an infrequent occurrence [Nwokah et al., 1999]. Kohler [2008] not only reminds us that, in conversation, speakers can rapidly move from speech-smiles (with higher vocal frequency than speech accompanied by neutral affect) to speech-laughs to laughter (or any sequence of these three), but that speech-laughs have a high degree of variability. Chafe explains and illustrates how varied laughter can be in frequency, voicing and intensity with and without speech. The examples in this chapter illustrate how speech and laughter can be combined in numerous ways with laugh pulses sometimes occurring over as many as 10 words or syllables. Chafe determined from his analyses that there are four types of pitch-related oscillations when speaking – that of speech itself and three that can be imposed on the speech − creaky voice, tremolo and laugh pulses. He provides clear illustrations of these phenomena with seven spectrograms to show tremolo, which is rapid glottal vibration on a variety of speech sounds co-occurring with laughter, occurs at about 20 Hz, and almost sounds like a quivering or vibration of the voice when speaking. It is particularly noticeable if spoken on a vowel sound and one example in the book is tremolo on 'oh' in 'oh, yeah'. In contrast, a creaky voice (that sounds like an elderly person speaking) is produced with a relaxed larynx at about 50 Hz. In a creaky voice phonation occurs at the lower end of the voice fundamental frequency range, vibration of the vocal cords is irregular, and airflow is slow. Finally, laugh pulses are the rhythmic syllables of laughter that mostly are exhaled air and combine with speech to give speech-laughs their unique quality. These are some of the features of laughter and speech in the typical population.

It would have been valuable to include information on the distinction between real laughs and false laughs as in embarrassment, awkwardness, and even depression, because the vocal quality of false laughs is not the same as real laughs. False or artificial laughs are used in multiple settings such as Laughter Yoga clubs or in social situations where a person wants to be accepted and tries to laugh. One example is available on the website Listen to Laughter (http://www.listentolaughter.com/tag/fake-laughter) (also recorded as Laugh for Joy on http:// www.youtube.com) where the person starts with a fake laugh and it quickly develops into real laughter. Reysen [2006] defined false laughter for the purpose of his study as 'mimicked laughter not generated by genuine positive affect'. He noted that false laughter has not been examined empirically and he had college students identify real versus fake laughs with a higher than chance success rate. It should be noted that this was still only 56%, and the significant but low success rate may have been related to the way the laughter samples were collected. Subjects produced a spontaneous laugh (real laughter) in response to photographs and then they were asked to reproduce the same

laughter from recall of that situation and try to duplicate the same duration of laughter (false laughter). As the first laugh was associated with a humorous trigger it is uncertain if the second laugh was truly false or linked to the memory of the original stimulus.

If Chafe had included information on child laughter he might also have explored false laughter as vocal play. Multiple examples of these can be found on http://youtube.com such as 'Sam's false laugh – 23 months', and 'We're not going to win an Oscar for this false laugh'. Another type of false laughter is synthesized or computer-generated laughter. Can we tell the difference? Of the seven samples of computer-generated versus human laughter listed by *New Scientist* on http://www.soundsfunny.org/turing/index.php, based on research conducted at Salford University UK, I correctly judged 71%. The question is: what sound parameters need to be changed in order for us to perceive the difference between false and real laughter whether human or non-human? The answer is likely to be a combination of acoustic features and accompanying facial expressions and body language that help us distinguish real laughs in social situations. Subtle differences in facial expressions may contribute to our perception of what is a felt rather than feigned smile [Ekman and Friesen, 1982]. These are important issues in the study of laughter that help define the true nature of laughter.

In addition, this book does not attempt to address the acoustic features of atypical laughter and related voicing which, as a speech-language pathologist, I have observed in many cases. Such variations may include, for example, excessive glottal onsets of laughter pulses, ingressive laughter due to restrictions of breath control, and excessive breathiness and voiceless laughs. We do know that laughter in deaf persons is similar to normal laughter but may vary with lower frequency and longer duration [Makagon et al., 2008]. We know less about laughter in other populations with special needs.

This book is written from a linguistic perspective and therefore the emphasis is on the form and structure of what is said as well as its acoustic, phonetic and phonological characteristics. Chafe bridges a gap between linguistics and psychology by attempting to move beyond the acoustics of laughter to discuss what it is that triggers these changes in our vocal production. He does not hesitate to address the age-old question for which we may never have the complete answer, that is − why do we laugh? His view is that laughter is the expression of underlying feelings and that the feeling is a mental state. He argues that it is the feelings underlying the emotions that are the key. The mental state prevents persons from taking an event too seriously. It inhibits the feeling of seriousness. Laughter can be prompted by humor and by non-humor. Chafe's definition of humor emphasizes the importance of 'pseudoplausibility' as one essential component (something must seem even slightly plausible) and 'absurdity' as the other component. Evidence for some kind of pleasurable feeling during humor experiences has been made increasingly possible through neurological studies. Regrettably, this book has only one page on the brain and humor in chapter 5. Information from neurological findings continues to emerge especially in functional magnetic resonance imaging (fMRI). In work by Mobbs et al. [2003] the process of watching funny cartoons activated the same area of the brain associated with happiness, seeing beautiful faces, and cocaine-induced euphoria whereas cartoons that were not funny had no such effect. The degree of neural activity, directly related to how funny the research subject perceived the cartoon, was in a network of regions of the brain, including an area called the nucleus accumbens and the amygdala in the limbic system. Chafe cautions us regarding the interpretation of neural analyses such as fMRI and the search for localized areas related to humor. His concerns include necessary constraints such as the impact of inhibiting movement associated with laughter, and the likelihood that humor is experienced across the cortex. Yet, as advances occur in technology and there is less ambiguity in the interpretation of neural imaging we may find additional neurophysiological evidence for Chafe's theory that laughter expresses a feeling because we can see changes that occur and are experienced by the person laughing.

In order to fully understand the human emotions and behavior related to humor and laughter it is important to acknowledge the complexity of this process and there are three areas where this book may have oversimplified laughter and humor-related events: the occurrence of nonseriousness without humor; the concept of nonseriousness as a feeling state, and the cultural differences in humor and laughter. First, Chafe lists many examples in chapter 7 as some of the triggers for laughter responses to nonseriousness but argues these are not humor. Humor is so difficult to define that when laughter occurs we may not always know whether humor is involved.

For example, our data on infant behaviors that triggered maternal laughter [Nwokah and Fogel, 1993] showed that mothers who laughed a lot would laugh with the slightest change of behavior by their baby such as moving an arm or leg or the onset of a smile. It could not easily be argued that this was incongruity or unexpected behaviors as the baby produced them frequently. The laughter in this case was part of pleasurable interaction. Chafe lists 17 categories, such as 'bereavement', that do not involve humor but could trigger laughter. He gives examples of each category. He argues that laughter may reduce the negative feelings in those situations. It is important to analyze the acoustic features of some of these laughs that may reflect embarrassment or discomfort. I once showed videotapes of adult laughter to an academic audience and a clinical psychologist astutely noticed that one person, who laughed frequently, produced laughter that was qualitatively slightly different from the laughter of others and she asked if that person was depressed or had some negative experiences recently. This was correct as she was experiencing a divorce.

We know there are many triggers for laughter including visual, physical, verbal, and vocal. The categories in this book of different nonhumorous circumstances as a source for laughter are not mutually exclusive and some such as profanity, things that are disgusting, abnormal situations and anthropomorphizing could be considered to have additional elements that are humor-related such as the speaker's tone of voice, facial expression, and hyperbole that trigger the laughter even if the situation is serious. There may, therefore, be several co-occurring triggers for laughter such as incongruity, wit, or situational comedy as a source of amusement. My recent work on word play and family humor-based folklore [Nwokah et al., in press] revealed numerous examples of such humor in family routines. For example, the phrase 'You like (or love) Richard Simmons' was created with the purpose of gaining compliance and was used to get family members to help with the dishes after a meal by saying 'Last one into the kitchen to help with the dishes loves Richard Simmons.' (Richard Simmons is a well-known, rather effeminate personality who advocates fitness but is often dressed in scant, sometimes tightly fitted workout clothing). The first time a family member invented this phrase the group response might have been shock, embarrassment, or sensitivity to the ridicule. This was specifically insider teasing with some 'pseudoplausibility' and became a source of humor and laughter on every similar family occasion.

Second, I would argue that the feeling associated with laughter is not an emotional or feeling 'state' but is a dynamic and rapidly changing experience [Fogel et al., 1992]. The feeling is closely linked to a person's action and responses in a social and/or situational context, often within a familiar relationship. The laughter is a sudden 'catastrophic' shift as a result of the emergence of several factors that cause a change in feeling from serious (neutral or negative) to nonserious. As Chafe does point out in his summaries of other scholars who deal with laughter, Morreall [1983] has argued that laughter is the result of a psychological shift especially in response to the experience of incongruity. Martin [1998] has described the physiological changes that occur with such a transition to what he terms the emotion of 'mirth' often expressed as laughter. This change in feeling could be an escalation such as a situation where two children or adults are already in a playful mood and exchanging banter, and an additional joke or unexpected experience shifts the response to laughter as in sibling play episodes [Nwokah and Graves, 2009]. The duration of the nonserious feeling always depends on a complex interaction between the situation, stimulus, shared expectation, previous humor and laughter experiences, the nonvocal aspects of the situation, such as facial expressions, and relationship with the communicative partner. My work on children's humorous language play, the timing of laughter in play between mothers and infants, and infant behavior changes as triggers for maternal laughter [Nwokah and Fogel, 1993; Nwokah and Graves, 2009; Nwokah et al., 1994] suggests that most laughter is the result of relationship-based positive playfulness whether involving humor or not. McGhee [2002] regards humor as a form of intellectual play and play with ideas. Humor is usually social and what the approach in Chafe's book lacks, in spite of having many examples of spontaneous humor between conversational partners, is an emphasis on laughter and humor in the context of relationships and the co-regulation that occurs within those relationships. Most notable is the occurrence of humor within families or between couples. Campbell [2007] found that adults change their voice and speaking style with different conversational partners, revealing that social and intercultural relationships play a crucial role in laughter production and use. Norrick's [1993, 1994] work on humor in conversation and reframing interaction as play

highlights the importance of the conversational give and take and how it can evolve.

Third, chapter 11 on cultural differences in linguistic humor reveals some compelling contrasts but is very limited in content and this is a rich area for an in-depth discussion on ethnic and gender differences in humor. Chafe describes examples from Navajo, Chinese, Iroquois, and Japanese humor using several jokes and written poetry in the case of Japanese. My first real experience with such differences many years ago was my failed attempt to provide an enjoyable nonserious experience in the classroom. I showed university students in a sociolinguistics class in Nigeria a video of a British comedy where the humor was based on verbal ambiguity and innuendoes and social class differences in dialect and behavior. I quickly learned not to assume that humor appreciation is shared between cultures or even within the same culture especially between generations.

This book regrettably did not include any information on child humor and laughter although there is mention of infant laughter from the perspective of the ontogeny of laughter. There has been a rich history of theoretical and data-based research on children's humor but from an acoustic and developmental perspective there is still much to be learned. By investigating child laughter we may learn more about variability in laughter type including laughter squeals, rapid shifts back and forth from laugh to cry, children who are 'gigglers' versus 'laughers' and the relationship between types and frequencies of laughs and temperament. Laughter can be quite common in infants and young children produced in experimentation with sounds, or during a period of preferred vocalization types. In addition there are unusual cases of laughter production I have experienced such as a child with autism who would laugh while alone throughout the night, and another who burst out laughing whenever he was scolded by his mother probably responding to her change of tone without understanding it.

In conclusion, this is one of the best contributions to the acoustic analyses of laughter that is both fascinating and readable. Chafe covers key evidence in the literature and provides sufficient data and yet manages to keep the book to a reasonable length. He goes beyond a detailed analysis of laughter and considers the feeling and emotional experience. This is an important endeavor. Apart from expanding our understanding of laughter and humor, by examining underlying feelings, we acknowledge that persons vary in their outward responses to humor for reasons that may be cultural, physical, or personality-related and that what one person finds funny, another may not. Laughter is a frequent occurrence across cultures especially in social interaction. This common vocal and facial signal and the individual variations in its acoustic features and use warrant continued scientific investigation. This book historically will remain a great resource on the topic of laughter and humor.

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