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Emotional reactions to variations in contract language

Cindy L. Menches, Ph.D., P.E.[1] and Lawrence Dorn[2]

Abstract
This article introduces a theory of emotion-driven behavior in construction contracting and provides support for this theory by presenting the quantitative results of a study on the emotional reaction of individuals to the language in contract clauses. Four different versions of the standard Delay Clause found in most construction contracts were extracted from four different contracts and were presented to a group of 27 individuals. Participants rank ordered the clause versions from 1 (most negative) to 4 (most positive). Overall, Clause Version 2 was ranked as having the most negative contract language, with nearly 75% of the participants ranking it as most negative. In contrast, Clause Version 4 was ranked as having the most positive contract language, with over 50% of the participants ranking it as most positive. Participants likewise selected negative emotion words to describe their reaction to Clause Version 2 and positive emotion words to describe their reaction to Clause Version 4. The findings suggest that contract clauses that contain negative language *do* tend to generate negative emotional reactions while positive contract language *do* tend to generate positive emotional reactions.

Keywords: contract language, emotive words, emotional reaction, delay clause

1. Introduction to the theory of emotion-driven behavior in construction contracting

The key functions of a construction contract are to ensure predictability and security in the business transaction between parties while also promoting positive interactions and outcomes (Macaulay 1963). And while a positive outcome is the goal in such a business exchange, a contract may be written in ambiguous language or may allocate liabilities to the wrong party, thus increasing – rather than decreasing – conflict among parties (Malhotra 2009). Recently, emerging research on exchange relationships has suggested that *contract framing* – which involves assigning liabilities using specific language and contractual structure – can induce distinct emotions and behaviors in individuals (Weber and Mayer 2011) and can set the tone for the exchange relationship (i.e., cooperative v. antagonistic) (Menches and Chen 2012). This research has also suggested that inappropriate detail in contracts (i.e., too much or too little) may trigger negative emotions that can undermine trust and impede collaboration among parties (Argyres et al. 2007; Sitkin and Roth 1993). While a fair amount of important research has addressed how contract framing has been used to safeguard against exchange hazards (Argyres and Mayer 2007; Poppo and Zenger 2002; Vanneste and Puranam 2010), relatively little is known about the impact of contracts on human emotions and behaviors.

One feature that may influence parties' emotional reactions to a construction contract is the specific language used to craft the agreement. In particular, scholars working in other fields, such as marketing, have long noted that *emotive language* – words and phrases that evoke emotional reactions in people – may induce intense positive or negative reactions beyond its literal meaning. More recently, scholars who have studied business exchanges have suggested that such language may be inherent in contracts (Mayer and Weber 2009; Murray and Kujundzic 2005; Straker 2010) and that a subtle affective (i.e., emotional) reaction can be triggered by technical or contractual language that is not specifically emotion-focused. For example, in a construction contract, the phrase "stakeholder" is likely to evoke a different reaction than "team member." The use of emotive language has been used broadly – and often deliberately – in other fields to generate human emotional reactions, particularly in advertising (to create excitement) (Holbrook and Batra 1987), news reporting (to create sensation or sadness) (Pantti 2010), and political campaigns (to generate outrage or support) (Jerit 2004). But, while specific affective words and phrases are often used to *intentionally* manipulate human emotions, even words and phrases that *do not intend* to activate emotions, per se, can *unintentionally* communicate an affective tone, thus triggering a subtle emotional response (Mossholder *et al.* 1995). Consequently, construction contracts – while

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meant to prevent undesired behaviors and outcomes – may inadvertently contain emotive language that induces the very behaviors that contracts are designed to prevent (Dyer and Singh 1998; Malhotra 2009).

The purpose of this article is to contribute to the growing body of research on contract-driven behavior in business settings. Specifically, this article introduces a theory of emotion-driven behavior in construction contracting and provides support for this theory by presenting the quantitative results of a study on the emotional reaction of individuals to the language in contract clauses. Until now, no research has specifically addressed how contract language and contractual structure can evoke emotional reactions in individuals that may theoretically influence negative and positive behavior over time. Yet, such an influence may contribute to an antagonistic or cooperative construction environment that impacts performance (Larson et al. 1996; Menches et al. 2012). Consequently, this article aims to increase awareness within the construction industry of how construction contract framing can induce emotional reactions in individuals. In the long-term, the research is expected to generate a better understanding of how appropriate contract framing can provide the means to effectively stimulate cooperative behaviors by fostering positive emotions among parties.

2. Regulatory Focus Theory as the Foundation for Contract-Driven Behavior

Although a significant amount of research has addressed how contracts have been used to mitigate exchange hazards (Gergen 1992; Muris 1981; Wathne and Heide 2000; Williamson 1979), such as cost escalation or schedule delays, little is known about the psychological impact of contracts on individuals. Contract framing – the allocation of liabilities through contract language and contractual structure – offers one potential explanation for the emotional reaction of exchange partners. For example, a *duration clause* can be framed as a shorter-duration contract with the possibility to extend for a longer period or can be framed as a longer-duration contract with the possibility of terminating the contract early; although the legal intention is essentially the same, exercising the early termination provision will evoke dramatically different emotions and reactions than *not* exercising the contract extension provision (Weber and Mayer 2011). Regulatory Focus Theory – which provides the foundation for the emerging theory of contract-driven behavior -- suggests that individuals view the world through either a prevention frame or a promotion frame (Higgins 1997; Higgins et al. 1999) -- and this theory has a direct correlation in contracting: a contract can be written to evoke loss-prevention behavior or gain-promoting behavior (Mayer and Weber 2009; Weber and Mayer 2011). A loss-prevention frame is associated with *protective behavior*, where each party seeks to avoid losses resulting from poor productivity, missed milestones, cost escalations, or inadvertent acceptance of additional liability. In contrast, a gain-promoting frame is associated with *cooperative behavior*, where the parties seek to maximize gains that might accrue from efficient practices, early completion, cost savings, and appropriate allocation of liabilities. The different frames lead to different emotions, where a prevention frame leads to more neutral or negative emotions thus forming the basis of more distant arm's length relationships, while a promotion frame leads to more positive emotions that support close, cooperative relationships (Gross and John 2003). Thus, the sharing of information is more likely to be successful under a promotion frame, while "due diligence" (i.e., the vigilant investigation of facts and circumstances) will be enhanced under a prevention frame (Baron 2004). Regulatory Focus Theory, therefore, suggests that prevention-framed and promotion-framed contracts evoke very different emotional reactions from parties to the exchange relationship. Consequently, Regulatory Focus Theory provides a new lens for examining exchange relationships and the emotional reactions of the individuals involved.

3. Emotion words and emotive contract language

Over the past fifty years, scholarly research on emotions and emotion categorization has proliferated, resulting in theories and seminal studies that have significantly increased the general understanding of how language – especially written words -- can influence the emotions of individuals. For example, Russell (1980) noted that individuals organize and classify emotions in a "set of categories, each labeled by a term – such as happy, excited, or sad – that make up a taxonomy of emotions" (p. 1162). He, along with other researchers, also noted that the affective (i.e., emotional) structure implicit in the English language supports the theory that words are also *drivers* of emotions (Osgood et al. 1975; Plutchik 1962; Royal and Hays 1959; Russell 1978). The recognition that written language evokes emotions in humans has resulted in its deliberate use in a number of fields, including marketing, advertising, sales, politics, and news reporting. But, the presence and impact of emotive language in contracts has not been specifically studied.

However, interest in emotive language in texts has experienced a significant increase in recent years. Specifically, a number of studies have focused on quantifying the emotional tone of language in text passages, such as text in fictional novels (Fournier et al. 1986; Whissell 1998; Whissell 2010). Only a few studies have focused on the assessment of emotional content of descriptive tasks or business documents (Mossholder et al. 1995; Petrone and Whissell 1988). For example, in a study conducted by Mossholder et al. (1995), participants were interviewed about events associated with a corporate transformation effort. The researchers collected open-ended responses to questions about various transformation events, and using textual data analysis, they were able to identify a participant's emotional reaction to a transformation event based on the participant's response to questions about the event. That is, the particular words used to describe their reaction to the transformation event were analyzed for their emotive meaning.

Recently, scholars working in fields such as computer science and affective computing have made significant advances in identifying and classifying the theoretical emotional valance of texts, especially in e-mail messages, web blogs, and internet product reviews. Unfortunately, only limited progress has been made in linking the theoretical emotional valance of text to the actual emotional response of individual readers of text. Thus far, scholars have demonstrated that readers perceive emotion in e-mail messages by noting specific nonverbal features, such as all-capital letters, bold text, exclamation points, or the use of particular phrases (e.g., "I'm disappointed" versus "I'm pleased") (Byron and Baldridge 2005). Other attempts at linking textual content to the emotions of the reader include surveying the reader immediately following the review of a news article or blog to document their emotional reaction to the content (Lin et al. 2007; Yang et al. 2009). However, this line of research is in its infancy.

The study reported in this article aims to contribute to the growing body of research on emotive language in texts by specifically linking individuals' self-reported emotional reaction to four variations of the same contract clause (i.e., delay clause) following their review of the four clauses. This study generates a preliminary understanding of the language and contractual structure that trigger emotional responses in individuals and, if combined with additional research, may lead to a theory-based advance in the development of construction contract instruments.

4. Study on the emotional reactions of individuals to variations in contract language

The urgency to understand the connection between contract language and human emotions and behaviors in the construction industry is symptomatic of a growing concern over how to cope with an increasing demand for better collaboration among parties within an environment that may not have the supportive elements to foster such positive behavior. And, while there are a number of factors that may contribute to negative or positive emotions and subsequent behaviors among construction stakeholders, the study reported in this article focused specifically on the impact of contract language on initial emotional reactions of individuals because these reactions may influence relationships over time. Consequently, the next few paragraphs present the results of the quantitative analysis of the relationship between contract language and self-reported emotional reactions of individuals.

4.1. Using Russell's Circumplex Model of Affect to map emotional reactions

One way to demonstrate the relationship between contract language and individuals' emotional reactions to this language is through statistical analysis. Such an analysis allows researchers, for example, to identify the association between the language in a specific version of the clause (rated as negative or positive) and individuals' initial emotional reactions to the clause (also rated as negative or positive). Subsequently, a researcher can contrast the reactions of individuals to different clause versions to determine which version of the clause contains language that generates the most negative or most positive emotional reactions. For instance, there might be a stronger relationship between negative contract language and negative emotional reactions to clause version 1 versus clause version 2. Consequently, developers of contracts might be persuaded to select a more positively worded version of a clause in order to support positive relationships between exchange parties.

A complimentary and visual way to contrast the individuals' reactions to different clause variations involves plotting their emotional reaction to each of the four clauses onto a two-dimensional graph that represents the dimensional space of emotions. While a significant number of seminal studies on emotion classification have been conducted (Ekman 1999; Plutchik 1962; Russell 1980), Russell's Circumplex Model of Affect is believed to sufficiently represent the cognitive structure that laymen use to conceptualize affect. Furthermore, Russell's model has been cited in over 3500 other scholarly works and

has accumulated a preponderance of evidence in support of its validity. It is among the most widely used and studied representations of affect.

Consequently, Russell's Circumplex Model of Affect was selected for use in the study to aid the researchers in selecting appropriate emotion words and also to aid in visually representing the findings. The model identifies four categories of emotions mapped onto a circle in two-dimensional space "in a manner analogous to points on a compass" (Russell 1980). According to Russell, "The horizontal (east-west) dimension in this spatial metaphor is the pleasure-displeasure dimension, and the vertical (north-south) dimension is arousal-sleep." This cognitive structure of emotions was tested by Russell in three separate experiments to determine whether "the layman's mental map of affective space" supported his hypothesized circular model. In each experiment, a sample of 28 words was chosen to represent the domain of affect. These 28 words were then scaled and placed in a circular order by the participants. Figure 1 provides a representation of the results from Russell's first experiment, depicting a polar order to the 28 emotion words. For example, the emotion *happy* was placed at polar coordinate 7.8° and indicates an increase in arousal and slight decrease in pleasure. Likewise, the emotion *excited* was placed at 48.6° and involves greater arousal and less pleasure. Emotions placed beyond 90°, such as *alarmed* (96.5°), begin to involve displeasure and less arousal. And, emotions placed beyond 180°, such as *sad* (207.5°), correspond to less arousal with some (but less) displeasure. Finally, emotions placed beyond 270° correspond to increases in both pleasure and arousal, such as *calm* (316.2°) and *pleased* (353.2°).

Russell's conceptualization of the emotions as patterned around a circle resulted in four quadrants (Fig. 1): (1) Quadrant I = pleased/aroused, (2) Quadrant II = displeased/aroused, (3) Quadrant III = displeased/unaroused, and (4) Quadrant IV = pleased/unaroused. Consequently, Russell's "spatial metaphor" for emotions, along with 20 of the 28 emotion words from his original study, were used to investigate how individuals emotionally react to the language and structure of construction contracts.

<INSERT FIGURE 1 HERE>

4.2. Research Purpose, Questions, and Hypothesis

The purpose of the study was to investigate the relationship between specific language in contracts and individuals' emotional reactions upon reading the contracts. The researchers were particularly interested in determining whether and how emotional reactions varied as the language of contracts varied. Based on research performed in other fields that demonstrated that words can evoke emotional reactions, the researchers believed that a perceived negative or positive tone (as evidenced by participant-assigned negative or positive scores) would trigger specific emotional reactions and also that a *pattern* of specific emotions felt by the participants would emerge. Consequently, the researchers sought to test the following research hypotheses:

H1: Contract clauses that contain negative language will tend to generate negative emotional reactions in individuals while positive contract language will tend to generate positive emotional reactions.

H2: A consistent pattern of specific emotions experienced by individuals upon reading variations to the same contract clause (i.e., the Delay Clause) will emerge.

4.3. Research Method

Four different versions of the standard Delay Clause found in most construction contracts were extracted from four different contracts. These four clauses were presented to a group of 27 individuals enrolled in a construction management course, and the participants were given 90 minutes to read all four clauses and then respond to a series of multiple-choice, scaled, and open-ended questions. The results reported in this article include the quantitative analyses of the multiple-choice and scaled responses.

4.4. Contract Clauses

The four Delay Clauses were extracted from the following contracts: (1) American Institute of Architects (AIA) A201, (2) Chicago Public Building Commission (PBC), (3) ConsensusDocs 300, and (4) Integrated Form of Agreement (IFOA). The complete text of the four clauses can be obtained from the researchers. An online text analyzer tool, Textalyser.net, was used to analyze the length and complexity of the clauses. To summarize:

(1) AIA A201, Section 8.3 Delays and Extensions of Time: Consists of 141 words and three sentences. *The first sentence consists of 107 words*. The complexity rating was 56.7%, where complexity

is calculated as the number of different words divided by the total number of words times 100. The readability score was 10.5, where a score of 6 is easy, a score of 13 is moderate, and a score of 20 is hard. The following is an excerpt from the first paragraph:

> "If the Contractor is delayed at any time in the commencement or progress of the Work by an act or neglect of the Owner or Architect, or of an employee of either, or of a separate contractor employed by the Owner; or by changes ordered in the Work; or by labor disputes, fire, unusual delay in deliveries, unavoidable casualties or other causes beyond the Contractor's control; or by delay authorized by the Owner pending mediation and arbitration; or by other causes that the Architect determines may justify delay, then the Contract Time shall be extended by Change Order for such reasonable time as the Architect may determine."

(2) Chicago PBC, Section 10.03 Non-Compensable Delays; Causes of Compensable Delay; Compensation for Delays; Delays Which Do Not Qualify for Time Extensions; Procedure For Time Extension Requests: Consists of 1,359 words and 81 sentences. The complexity rating was 27.2%, and the readability score was 12.3 (moderate). The following is an excerpt from the first paragraph:

> "For a cumulative period of thirty (30) Calendar Days, the Contractor will not be compensated for the following delays: a delay in the commencement, prosecution or completion of the Work by any act of the Commission, including but not limited to a delay, change, addition, deletion or modification in the Work or any omission, neglect or default of the Commission, or by order of the Executive Director, or the Commission Representative, or by any cause beyond the Contractor's control, none of which are due to any fault, neglect act or omission on Contractor's part. However, the Contractor will be entitled to a Change Order providing a time extension for such delays. The Contractor agrees that the Change Order providing the time extension shall release the Commission, its employees and representatives from any and all claims for damages of whatever character, including but not limited to, disruption, changes in sequence, interference, inefficiency, field or home office costs for delays described above which cumulate to thirty (30) Calendar Days."

(3) ConsensusDocs 300, 15.6 Delays in the Work: Consists of 404 words and 26 sentences. The complexity rating was 32.7%, and the readability score was 14.2. The following is an excerpt from the first paragraph:

> "If the Constructor is delayed at any time in the commencement or progress of the Work by any cause beyond the control of the Constructor, the Constructor shall be entitled to an equitable extension of the Contract Time. Examples of causes beyond the control of the Constructor include, but are not limited to, the following: acts or omissions of the Owner, the Designer or Others; changes in the Work or the sequencing of the Work ordered by the Owner, or arising from decisions of the Owner that impact the time of performance of the Work; transportation delays not reasonably foreseeable, labor disputes not involving the Constructor, general labor disputes impacting the Project but not specifically related to the Worksite, fire, terrorism, governmental agencies, unavoidable accidents or circumstances, adverse weather conditions not reasonably anticipated, encountering Hazardous Materials, or concealed or unknown conditions, delay authorized by the Owner pending dispute resolution and suspension by the Owner. The Constructor shall process any requests for equitable extensions of Contract Time in accordance with the provisions of this Agreement."

(4) Integrated Form of Agreement (IFOA): Consists of 581 words and 32 sentences. The complexity rating was 32.9%, and the readability score was 14.9. The following is an excerpt from the first paragraph:

> "Whenever it becomes apparent that the Substantial Completion or Final Completion may extend beyond the Contract Time, as adjusted pursuant to this Agreement, CM/GC shall initiate collaborative efforts with the IPD Team to replan the Work in order to achieve Substantial and Final Completion within the Contract Time. CM/GC shall prepare and submit the IPD Team's revised plan, including an updated schedule describing how the IPD Team intends to recover so as to complete the Work within the Contract Time, within the time requested by the Core Group."

4.5. Questionnaire

After reading all versions of the Delay Clause, the participants responded to a questionnaire that consisted of the following sections:

1. *Demographics*: participants were asked to provide information about their age, gender, employment status, work experience, and experience at reading or reviewing contracts.
2. *Rating of positive or negative contract language*: participants were first asked to rank order the contracts from 1 to 4 to indicate how negative or positive they felt the language of the clause was, where a 1 was assigned to the most negative language and a 4 was assigned to the most positive language. Then, participants were asked to rate how negative or positive they felt the language of the clause was within each contract on a 7-point semantic differential scale, where 1 = very negative and 7 = very positive.
3. *Reaction to each contract clause:* participants were asked to describe, in their own words, their reaction to each contract's clause. Then, participants were asked to identify up to three phrases or sentences that they found to be especially negative or positive within each clause.
4. *Emotion words used to describe how they felt*: participants were provided with a table that listed 20 emotion words from Russell's Circumplex Model of Affect. The participants were asked to think about how they reacted to, and felt about, the language in each of the contract clauses. The participants were instructed to rank order the top three words that most strongly represented how they felt about the contract language, where a 1 = felt this way most strongly, 2 = felt this way next most strongly, and 3 = felt this way third most strongly.

4.6. Participant Demographics

The participants were 27 students enrolled in a construction management course, of which 70% were male and 30% were female students. The average age was 29 years old, with a range from 22 to 48 years old. Slightly more than half of the students (56%) were attending college full time, while 33% were working full time in the architecture/engineering/construction (AEC) industry (and attending college part-time). The remainder (11%) of the participants were working part-time in the AEC industry and attending school part-time. Nearly 15% of the participants had more than 10 years of construction industry experience, another 20% had more than five years of experience but less than 10 years, yet another 20% had between one and five years of experience in the industry, while the remaining participants (48%) had less than one year of construction industry work experience. Nearly 60% of the participants indicated they had some experience reading or reviewing contracts, and nearly 40% rated their experience as "moderate" or "major."

4.7. Rating of positive or negative contract language

Participants (N=26 due to one student failing to answer the question) rank ordered the clause versions from 1 (most negative) to 4 (most positive). Overall, Clause Version 2 (Chicago PBC) was ranked as having the most negative contract language, with nearly 75% of the participants ranking it as most negative and 85% (total) ranking it as most or second-most negative. Its average ranking was 1.4/4.0. In contrast, Clause Version 4 (IFOA) was ranked as having the most positive contract language, with over 50% of the participants ranking it as most positive and nearly 75% (total) ranking it as most or second-most positive. Its average ranking was 3.3/4.0. Nearly 45% of the participants ranked Clause Version 3 (ConsensusDocs) as second most positive, and 70% (total) ranked it as most or second-most positive (average ranking = 2.9/4.0), while 48% of the participants ranked Clause Version 4 (AIA) as second most negative, and nearly 70% (total) ranked it as most or second-most negative (average ranking = 2.2/4.0). A chi-square test was performed to determine whether each version of the Delay Clause was assigned equally to one of the four ranks (most/second-most negative, most/second-most positive). For example, Clause Version 1 was expected to be assigned a rank of 1 by 6.5 participants, a rank of 2 by 6.5 participants, a rank of 3 by 6.5 participants, and a rank of 4 by 6.5 participants. Hence, the chi-square test essentially tested the hypothesis that the participants ranked Clause Version 1 as most negative, second-most negative, second-most positive, and most positive *in equal proportion*. The chi-square test was performed for each clause version. All of the results were significant, indicating that the participants *did not* rank any of the clauses as most negative, second-most negative, second-most positive, and most positive in equal proportion. Clause Version 2 (χ^2 = 37.7, p = 0.000) tended to be ranked as *most negative* by a greater proportion of the participants, while Clause Version 4 (χ^2 = 15.2, p = 0.002) tended to be ranked as *most positive* by a greater proportion of the participants. Likewise, Clause Version 1 (χ^2 = 11.5, p = 0.009) tended to be ranked as *second-most negative* by a greater proportion of the participants, while Clause Version 3 (χ^2 = 8.2, p = 0.043) tended to be ranked as *second-most positive* by a greater proportion of the participants.

Participants also rated how negative or positive they felt the language of each clause was on a 7-point semantic differential scale, where 1 = very negative and 7 = very positive. On average, Clause Version 2 was rated as most negative, with a score of 2.6/7.0, while Clause Version 4 was rated as most positive, with a score of 5.6/7.0. Clause Version 1 was rated as second-most negative, with a score of 3.4/7.0, while Clause Version 3 was rated as second-most positive, with a score of 5.0/7.0.

4.8. Emotion words used to describe how they felt

Twenty of the 28 words that appear in Russell's Circumplex Model of Affect were provided to students as follows:

- Quadrant 1: happy, delighted, excited, astonished
- Quadrant 2: alarmed, angry, afraid, annoyed, distressed, frustrated
- Quadrant 3: sad, gloomy, depressed, bored
- Quadrant 4: calm, relaxed, satisfied, at ease, content, pleased

Participants rank ordered the top three emotion words that most strongly represented how they felt about the contract language, where 1 = felt this way most strongly, 2 = felt this way next most strongly, and 3 = felt this way third most strongly.

For Clause Version 1, which was ranked as having the second-most negative language, the top words that were selected by participants as best describing their emotional reaction included:
1. Felt this way most strongly: calm (19%), annoyed (15%), and alarmed (15%)
2. Felt this way next most strongly: frustrated (19%)
3. Felt this way third most strongly: distressed (15%) and afraid (15%)

Hence, many of the emotion words that were selected to describe participants' emotional reaction to Clause Version 1 were located in Quadrant 2, which indicated a general level of displeasure and also a general level of arousal (i.e., provocation).

For Clause Version 2, which was ranked as having the most negative language, the top words that were selected by participants as best describing their emotional reaction included:
1. Felt this way most strongly: bored (19%), distressed (15%), and alarmed (15%)
2. Felt this way next most strongly: frustrated (22%) and annoyed (15%)
3. Felt this way third most strongly: depressed (19%) and annoyed (15%)

Hence, many of the emotion words that were selected to describe participants' emotional reaction to Clause Version 2 were located in Quadrants 2 (displeased/aroused) and 3 (displeased/ unaroused).

For Clause Version 3, which was ranked as having the second-most positive language, the top words that were selected by participants as best describing their emotional reaction included:
1. Felt this way most strongly: calm (15%), at ease (15%), content (15%), and pleased (15%)
2. Felt this way next most strongly: relaxed (15%) and at ease (15%)
3. Felt this way third most strongly: satisfied (19%)

Hence, many of the emotion words that were selected to describe participants' emotional reaction to Clause Version 3 were located in Quadrant 4 (pleased/unaroused).

For Clause Version 4, which was ranked as having the most positive language, the top words that were selected by participants as best describing their emotional reaction included:
1. Felt this way most strongly: satisfied (19%)
2. Felt this way next most strongly: pleased (33%), content (15%), and satisfied (15%)
3. Felt this way third most strongly: relaxed (15%) and content (15%)

Hence, many of the emotion words that were selected to describe participants' emotional reaction to Clause Version 4 were located in Quadrant 4 (pleased/unaroused).

While a smaller number of participants selected other words to describe their emotional reaction to the language in each clause, the words identified in the paragraphs above were selected most frequently and fairly represent the general sentiment of the group as a whole.

4.9. Plotting emotional reactions along Russell's Circumplex Model of Affect

To visually contrast the participants' reactions to the four clause variations, the researchers plotted the emotion words that *most strongly* represented how each participant felt about the contract language (i.e., "felt this way most strongly") along Russell's Circumplex Model of Affect. The purpose for developing the plots was to visually display the general sentiment of the participants, where the x-coordinate represented how much pleasure or displeasure each clause version evoked in the participants while the y-coordinate represented how much emotional stimulation or dullness each clause version evoked.

Figures 2, 3, 4, and 5 display the results. The results are superimposed onto a representation of Russell's Circumplex so that the graph displays each emotion word from Russell's original model and the approximate location of the word that each participant selected as best describing their emotional reaction to each clause version. Jitter has been added to the data so that points that overlap can be distinguished on the graph.

<INSERT FIGURE 2 HERE>

<INSERT FIGURE 3 HERE>

<INSERT FIGURE 4 HERE>

<INSERT FIGURE 5 HERE>

Figure 2 identifies the participants' emotional reaction to Clause Version 1 (AIA), which was rated as having the second-most negative language. Overall, 48% of the participants selected emotion words from Quadrant 2, which indicated general displeasure and general arousal (i.e., provocation). Furthermore, 30% of the participants selected emotion words from Quadrant 4, which indicated a general pleasure but general dullness (i.e., unarousal). About 7% of the participants selected emotion words from Quadrant 1, which indicated general pleasure and general arousal, while about 6% of the participants selected emotion words from Quadrant 3, which indicated general displeasure and general unarousal. Hence, while nearly half the participants described Clause Version 1 as evoking emotions from Quadrant 2, which included alarmed, angry, afraid, annoyed, distressed, and frustrated, there was significant variability in responses.

Figure 3 identifies the participants' emotional reaction to Clause Version 2 (Chicago PBC), which was rated as having the most negative language. Overall, 56% of the participants selected emotion words from Quadrant 2, which indicated general displeasure and general arousal (i.e., provocation). Another 22% of the participants selected emotion words from Quadrant 3, which indicated general displeasure and general unarousal. About 15% of the participants selected emotion words from Quadrant 4, which indicated a general pleasure but general dullness (i.e., unarousal). And, about 7% of the participants selected emotion words from Quadrant 1, which indicated general pleasure and general arousal. Hence, the vast majority of participants (78%) described Clause Version 2 as evoking emotions that created displeasure but varying amounts of arousal (i.e., from Quadrants 2 and 3), and these emotions included alarmed, angry, afraid, annoyed, distressed, frustrated, sad, gloomy, depressed, and bored.

Figure 4 identifies the participants' emotional reaction to Clause Version 3 (ConsensusDocs), which was rated as having the second-most positive language. Overall, 70% of the participants selected emotion words from Quadrant 4, which indicated general pleasure and general unarousal (i.e., dullness). Another 11% of the participants selected emotion words from Quadrant 1, which indicated a general pleasure and general arousal. About 7% of the participants selected emotion words from Quadrant 2, which indicated general displeasure and general arousal, while about 11% of the participants selected emotion words from Quadrant 3, which indicated general displeasure and general unarousal. Hence, the vast majority of participants (81%) described Clause Version 3 as evoking emotions that created pleasure but created varying amounts of arousal (i.e., from Quadrants 1 and 4), and these emotions included calm, relaxed, satisfied, at- ease, content, pleased, happy, delighted, excited, and astonished.

Figure 5 identifies the participants' emotional reaction to Clause Version 4 (IFOA), which was rated as having the most positive language. Overall, 63% of the participants selected emotion words from Quadrant 4, which indicated general pleasure and general unarousal, while another 26% of the participants selected emotion words from Quadrant 1, which indicated a general pleasure and general arousal. About 7% of the participants selected emotion words from Quadrant 2, which indicated general displeasure and general arousal, while about 4% of the participants selected emotion words from Quadrant 3, which indicated general displeasure and general unarousal. Hence, the vast majority of participants (89%) described Clause Version 4 as evoking emotions that created pleasure but created varying amounts of arousal (i.e., from Quadrants 1 and 4), and these emotions included calm, relaxed, satisfied, at-ease, content, pleased, happy, delighted, excited, and astonished.

5. Discussion and Limitations

The findings of the study support Hypothesis 1: Contract clauses that contain negative language (as rated by the participants) *did* tend to generate negative emotional reactions (as self-reported by the participants) while positive contract language *did* tend to generate positive emotional reactions. The findings also support Hypothesis 2: A consistent pattern of specific emotions experienced by individuals upon reading variations to the same contract clause (i.e., the Delay Clause) *did* emerge. For example, Clause Version 2 was rated by participants as containing the most negative contract language, and likewise, this clause version evoked emotions in 78% of the participants that resulted in displeasure, especially boredom, alarm, fear, and annoyance, which were selected frequently by participants as the way they "felt most strongly." Furthermore, Clause Version 4 was rated by participants as containing the most positive contract language, and likewise, this clause version evoked emotions in 89% of the participants that resulted in pleasure, especially calmness, satisfaction, and a sense of feeling at-ease and feeling pleased. Hence, through this study, participants were able to articulate negative emotional reactions to negative contract language and positive emotional reactions to positive contract language.

The findings present an intriguing *first look* at how contract language might influence the emotional reactions of construction stakeholders. However, the study has limitations that must be identified so that future research might address such limitations. First, the study was performed in a laboratory-style setting, which may not accurately represent how stakeholders on a construction project might actually react to the language and structure of the contract. As a result, a field study using actual construction stakeholders as participants is needed. Furthermore, the theory presented in this paper implies that contract language my influence subsequent behavior, but this relationship was not specifically addressed in this study. Future research is needed to specifically examine the intricate relationship between contract language and subsequent behavior. Finally, there are a number of factors that influence the positive and negative reaction of individuals to contracts, such as specific content or ambiguity, and this study only examined one specific factor: contract language (i.e., the words that comprise the contract). Hence, the researchers cannot rule out the possibility that there might be significant interactions among factors that will strongly influence how individuals react to the contract as a whole.

6. Conclusion

This article introduced a theory of how individuals emotionally react to construction contract language and provided support for this theory by presenting the quantitative results of a study on the emotional reaction of 27 individuals to the language in four versions of the same contract clause. A link was established between the positive and negative ratings assigned by individuals to each version of the clause and the individuals' self-reported emotional reaction to the clauses. Ultimately, this article aimed to increase awareness within the construction industry of how construction contract language and structure can induce emotional reactions in individuals and how appropriate contract framing might provide the means to effectively stimulate cooperative behaviors by fostering positive emotions among parties.

7. References

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FIGURES

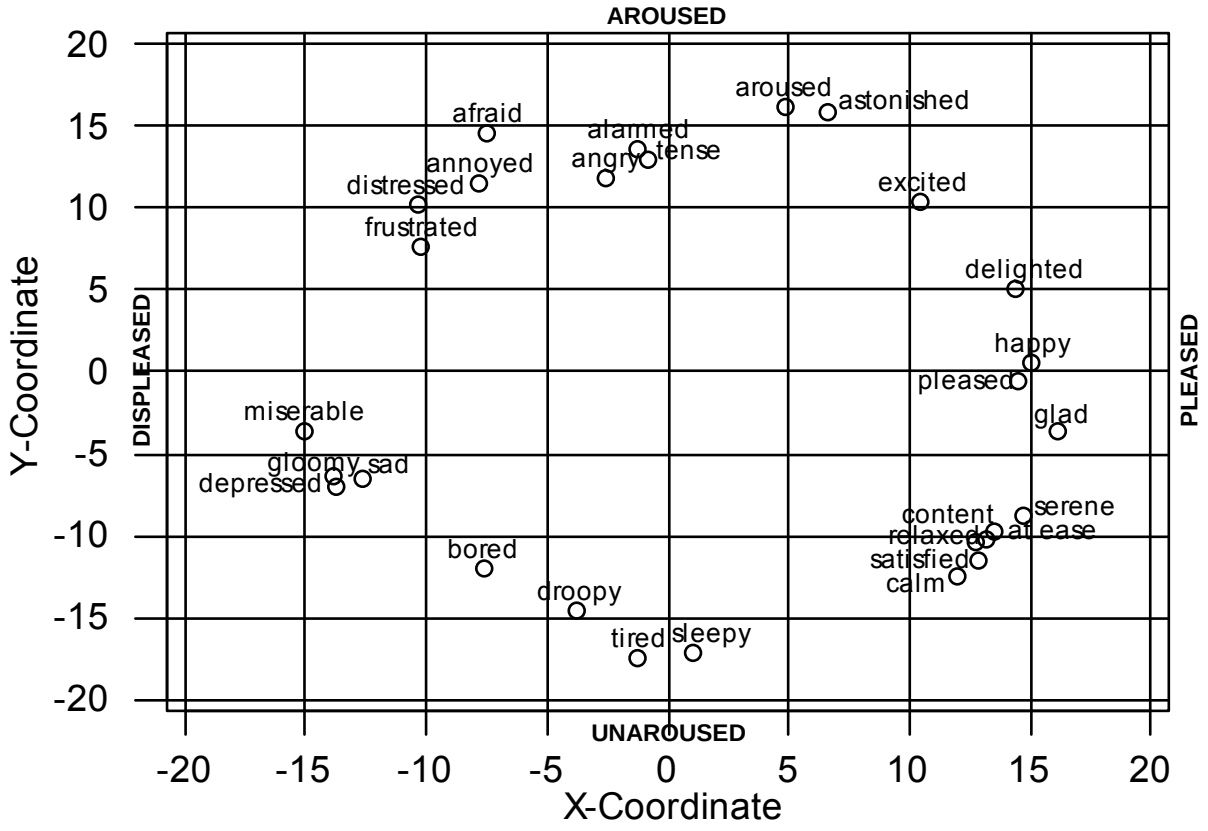

Figure 1. Representation of Russell's Circumplex Model of Affect (Russell 1980)

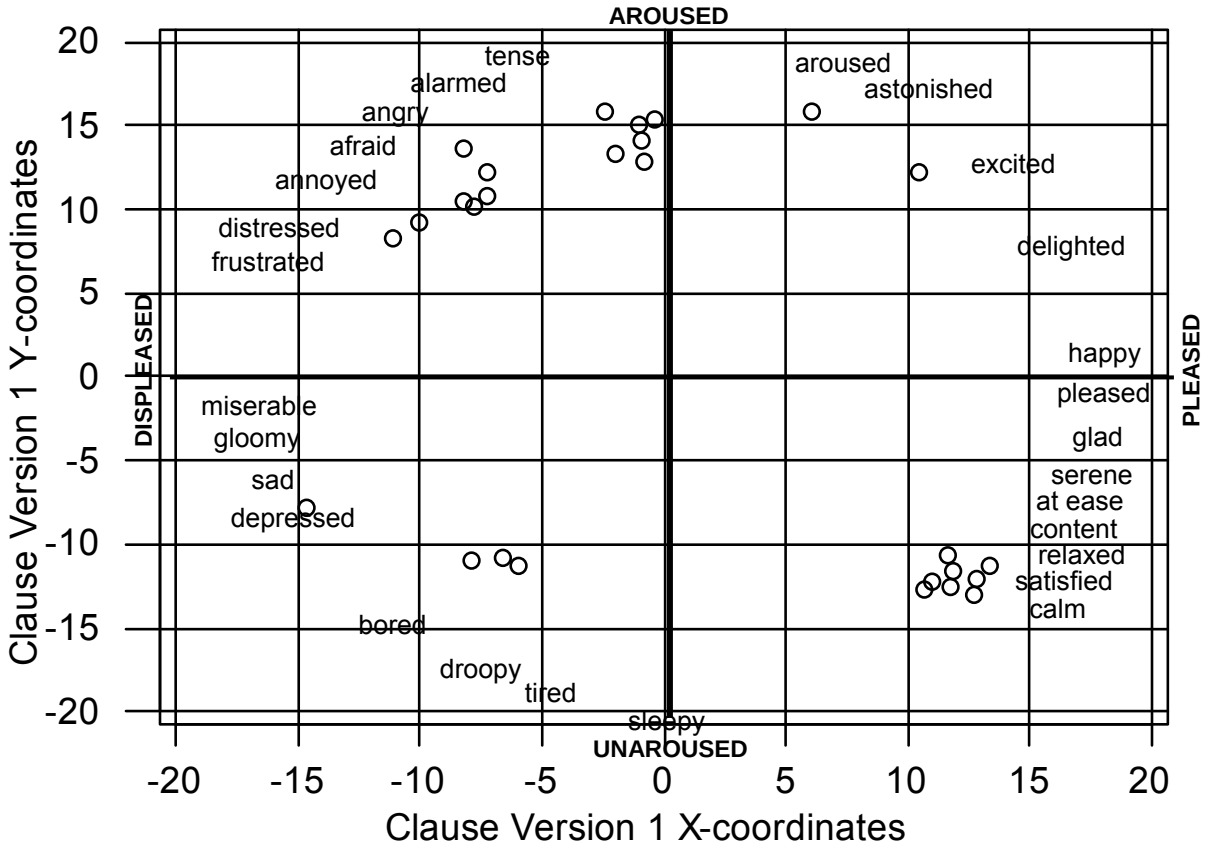

Figure 2. Participants' emotional reactions to Clause Version 1

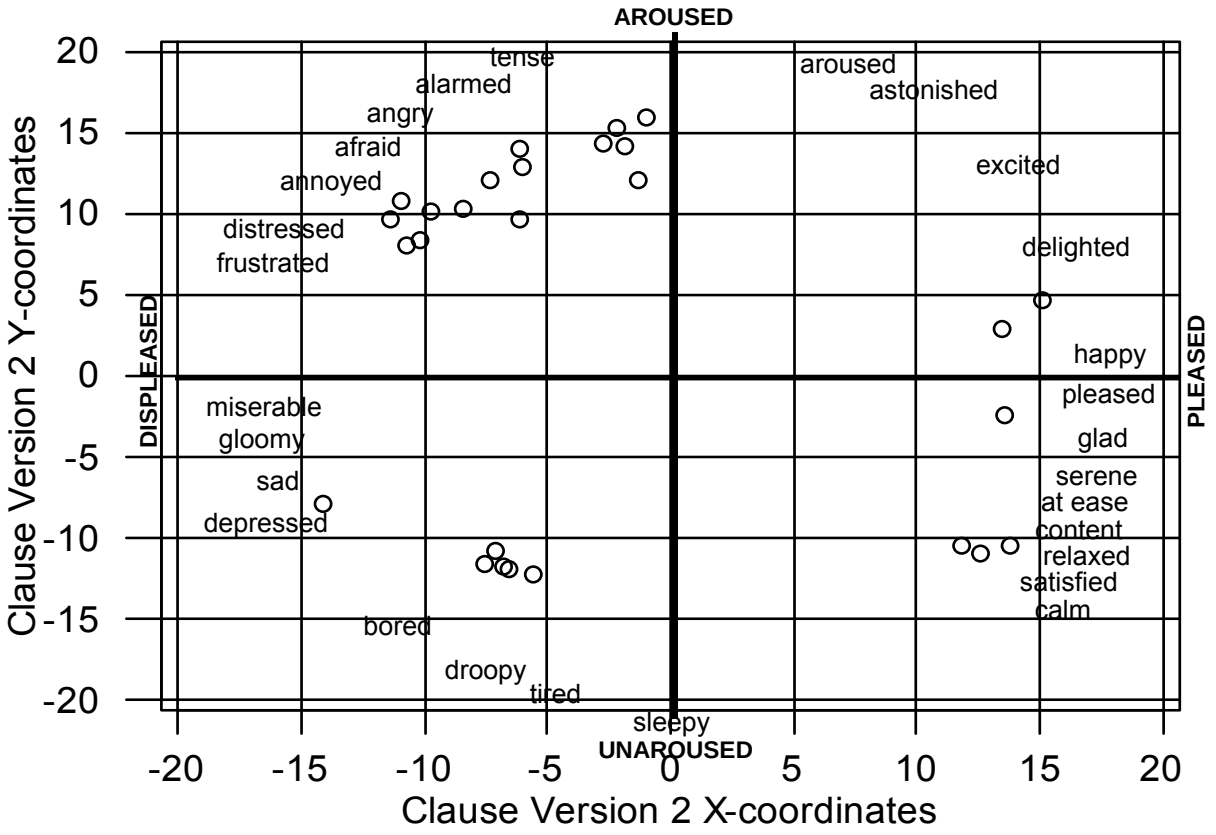

Figure 3. Participants' emotional reactions to Clause Version 2

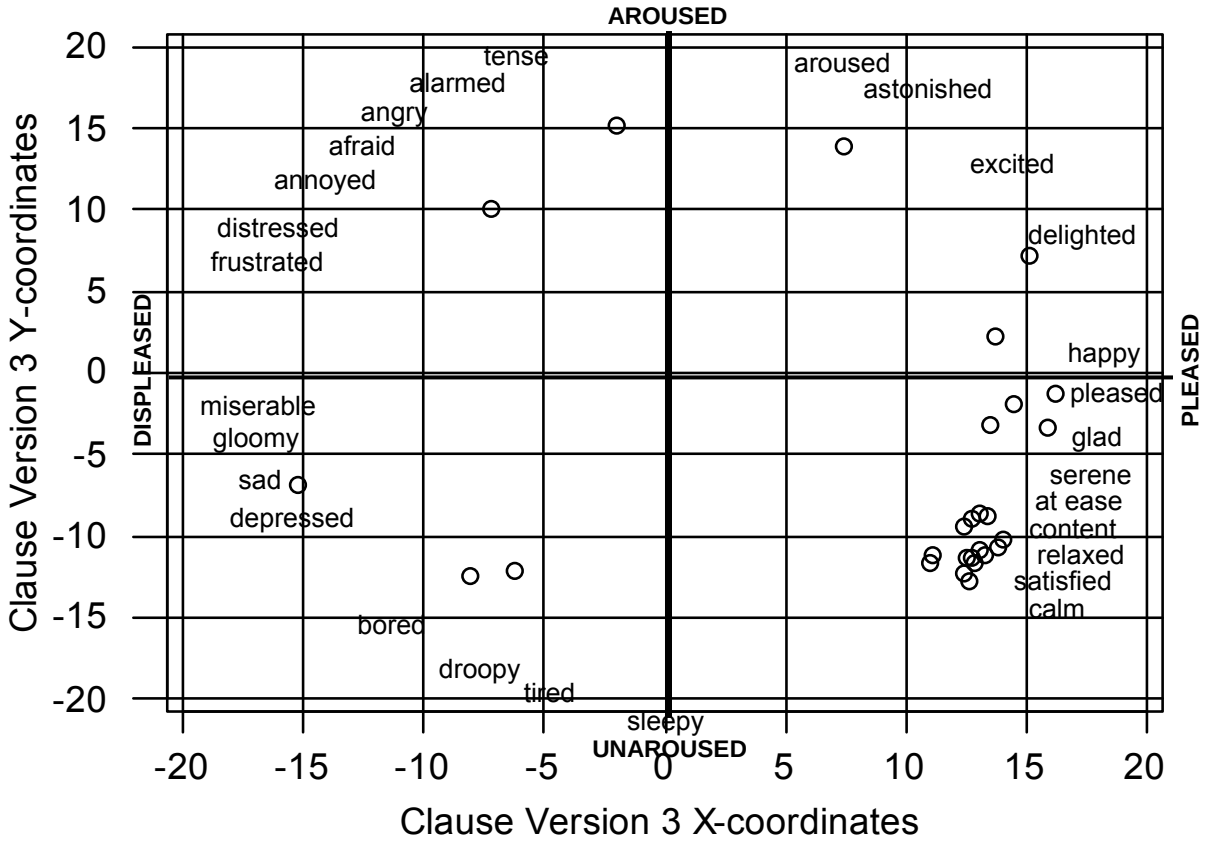

Figure 4. Participants' emotional reactions to Clause Version 3

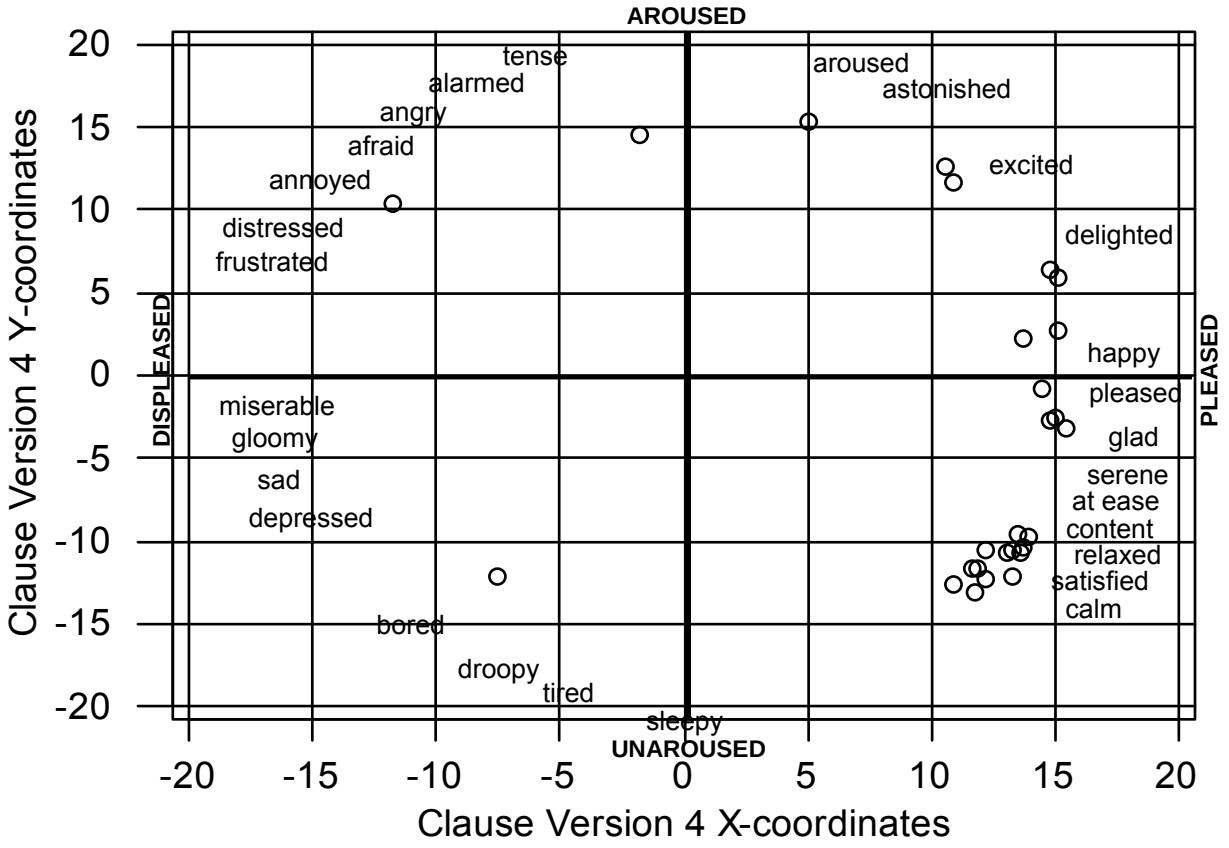

Figure 5. Participants' emotional reactions to Clause Version 4