Emotion structure, emotion meaning and emotion episodes of white Afrikaans-speaking working adults

A S van der Merwe, Magister Artium (Industrial Psychology)

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With GOD all things are possible!

Matthew 19:26

REMARKS

The reader should keep the following in mind:

- The editorial style as well as the references as prescribed by the *Publication Manual (5th edition)* of the American Psychological Association (APA) was followed in this thesis. This practice is in line with the policy of the Programme in Industrial Psychology of the North-West University, Potchefstroom Campus to use the APA-style in all scientific documents as from January 1999.

- The article is submitted in the form of six (6) chapters, consisting of the following: an introductory chapter, four (4) research articles and a conclusion chapter; each chapter has its own reference list. The editorial style specified by the South African Journal of Industrial Psychology (which agrees largely with the APA style) is used, but the APA guidelines were followed in constructing tables.

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SUMMARY

Title: Emotion structure, emotion meaning and emotion episodes of white Afrikaans-speaking working adults

Key Terms: Afrikaans, emotion terms, free listing, emotion lexicon, prototypicality, similarity, emotion structure, cognitive structure, emotion meaning, investigation, emotion theory, cross-cultural, dimensionality, white Afrikaner, emotion episodes, universal, two-dimensional, determine, three-dimensional, the evaluation-pleasantness dimension, the activation-arousal dimension, the power-control dimension, positive emotions, negative emotions, workplace, reliability, cultural relativism, natural contexts

Emotion research is an important research topic, thus making the measurement of emotion in the workplace crucial. In attempting to study, understand and measure the role of emotions in the human condition, various researchers have identified different theoretical models to manage the information they have gathered and the observations they have made. In order to study or scientifically investigate any human behaviour, it is essential that such behaviour can be measured, if not quantitatively, then at least qualitatively.

However, what one finds with regard to emotion research and measurement are two-dimensional models. The existing affect has been described with a choice of two dimensions and structures, i.e. circumplex, positive and negative affect, tense and energetic arousal, and eight combinations of pleasantness and activation. These two dimensions and structures measure a person's experiences and, thereafter, report them. The question is if these two-dimensional emotion models are sufficient to cover the broad and often complex dynamics of emotions.

The start of multiple-emotion dimension models were reported by researchers, who identified a three-dimensional structure in the emotion domain that is suggestive of the Evaluation-Potency-Activation (EPA) dimensions in the connotative or affective meaning of words. However, in recent studies the sufficiency of two-dimension models to comprehensively investigate emotions was questioned. The three-dimensional emotion model was replicated in cross-cultural similarity

sorting studies by other researchers. The similarity sorting studies also indicate the importance of studying emotions in specific cultural contexts. Studying emotion in different cultures is especially relevant in a country such as South Africa that has a variety of cultures and eleven official languages.

Researchers followed an approach that studied the meaning of emotion in different cultural groups in the context of 144 emotion features using a componential emotion theory approach. Researchers argue in the groundbreaking research that was published in Psychological Science that emotion meaning has more than only two dimensions. The approach postulated by researchers was tested in a student population of three language groups, namely Dutch-, English- and French-speaking students. According to researchers this is an empirical and theoretical method to study the meaning of emotions across cultures. However, apart from studying the meaning of emotions in specific cultural groups, research also attempts to determine the meaning of emotion in the natural contexts in which they occur. The relevant natural contexts for the field of Industrial Psychology are the work contexts. It is therefore also important to investigate the categories of emotion episodes in the work environment.

The general goal of this study was therefore a) to investigate the emotion lexicon in the white Afrikaans-speaking working adult language group, b) to determine the cognitive emotion structure of this cultural group, c) to investigate the meaning of emotion as comprehensively as possible (multidimensional models of the meaning of emotion), and d) to determine the meaning and content of emotion episodes in the workplace.

Research Article 1

The research was subsequently presented in two independent phases. Firstly, a free listing of emotion terms was compiled, and secondly the emotion terms were prototypically rated by Afrikaans-speaking people in South Africa. Both of these were then used as measuring instruments. A survey was designed to explore the research objectives utilising availability samples in two studies. The participants in the free-listing (N=70) and in the prototypicality (N=70) study consisted of native Afrikaans-speaking employees. The sample consisted of participants from the white ethnic group speaking Afrikaans within the Eastern Cape, Gauteng,

Free State, Mpumalanga, North-West and KZN provinces and use was made of an availability sample.

After conducting the research, the emotion terms with the highest frequency, as identified during the first study, the free listing task, were *to be happy (gelukkig wees), be sad (hartseer wees), love (liefde), anger (kwaad)* and *hateful (haatlik).* The emotion terms with the lowest scores as identified during the free listing were *uncomfortable (ongemaklik), painful (seer), be hurt (seergemaak wees), sympathetic (simpatiek)* and *shout/yell (skreeu).* Correspondingly, the five (5) prototypical terms with the highest scores in Afrikaans were *nice (lekker), fed-up/had enough (gatvol/"genoeg gehad"), loveable (liefdevol), anger (kwaad)* and *to be scared (om bang te wees).* The five (5) least prototypical terms from the list generated in the free listing task were: *unstable (onvas), bashfulness (skugterheid), captivation (geboeidheid), envy (naywer)* and *delight (opgetoënheid).*

From the information obtained in this research it was revealed that the emotion terms *nice (lekker), fed up/had enough (gatvol/"genoeg gehad")* and *loveable (liefdevol)* are at this stage unique to the white Afrikaans language group. These terms had not been reported in any previously conducted prototypical studies. The results of this study contribute to a cross-cultural understanding of the emotion concepts within the Afrikaans-speaking language groups in South Africa.

Research Article 2

A survey design was used to achieve the research objectives utilising availability samples in a series of one study. The participants of the Similarity study (N=131) consisted of native Afrikaans-speaking employees. The sample consisted of participants from the white ethnicity group speaking Afrikaans within the Eastern Cape, Gauteng, Free State, Mpumalanga, North-West, KZN and Northern Cape provinces and use was made of an availability sample.

Results of Multidimensional Scaling revealed a three-dimensional cognitive emotion structure. The first dimension was the *evaluation-pleasantness* dimension. This dimension evaluates the pleasantness versus the unpleasantness of an emotion. This dimension is characterised by

intrinsic appraisals of pleasantness and goal conduciveness and action tendencies of approach versus avoidance. The second dimension that emerged was a *power-control* dimension. This dimension is characterised by appraisals of control, how powerful or weak a person feels when a particular emotion is experienced. This includes feelings of dominance or submission, the impulse to act or withdraw and changes in speech and parasymphatic symptoms. The third dimension which emerged was an *activation-arousal* dimension. According to other researchers this arousal dimension is characterised by sympathetic arousal, e.g. rapid heartbeat and readiness for action.

This study produced a cognitive emotion structure in a white Afrikaans-speaking working adult population in South Africa. To add value to the field of Industrial Psychology, the three-dimension structure (*evaluation-pleasantness, power-control* and *activation-arousal dimension)* that was found, is very important and valuable when studying the meaning of emotion and can consequently be used as a reference for other emotion research constructs. If it is accurate as stated in literature, there are three and not *only* two emotion dimension structures, and researchers are missing out on a bigger picture for not drawing on the experience of emotion sufficiently.

Research Article 3

A survey design and an availability sample (*N*=120) in the Eastern Cape, Free State and Gauteng provinces in South Africa was utilised for this study. The Meaning Grid was translated and back-translated and adapted for use in Afrikaans.

The Cronbach's alpha coefficients were obtained for the emotion terms. According to the results of the Meaning Grid instrument, the following emotion terms were the highest: *disgust (afkeur) 0,95; pleasure (plesier) 0,94; stress (stres) 0,92; happiness (blydskap) 0,91; joy (vreugde) 0,91; fear (bang) 0,91; anger (angstig) 0,91* and *hate (haat) 0,90.* The emotion terms that scored the lowest with the Meaning Grid instrument were *compassion (medelye) 0,79; pride (trots) 0,79* and *contempt (minagting) 0,74*. Out of the 24 emotion terms of the Meaning Grid instrument, 8 terms were above 0,90 and 13 were between 0,80 and 0,89. Only 3 terms were between 0,74 and 0,79 [*compassion (medelye), pride (trots)* and *contempt (minagting)*].

A three-factor solution was found which represented four emotion dimensions (*evaluation, arousal/unpredictability* and *power*) that were universal to the emotion structures found in European samples. Factor scores of the 24 Meaning Grid emotions indicate a three-factor solution that explained 62,2 % of the total variance. The first factor was labelled e*valuation* and explained 43,0% of the variance, the second factor was labelled *arousal/unpredictability* as it was a combination of arousal and unpredictability and explained 11,0% of the variance, and the third factor was labelled *power* and explained 8,2% of the variance.

This study followed an approach that investigated the meaning structure of emotion in the sample group in the context of 144 emotion features using a componential emotion theory approach. Different researchers argued that emotion meaning has more than only two dimensions. A three-dimensional emotion structure was found that was universal to the emotion structures of three language groups in a European sample. Therefore, the meaning of emotions for this sample group is far more complex than the two-dimensional emotion models that are found in literature. According to the componential emotion theory approach, the 144 emotion features are very important building blocks for Industrial Psychology when studying the meaning of emotion.

Research Article 4

A survey design was used in this research study. The Episode Meaning Grid was administered and participants reported on the two intense emotion experiences at work (in total 358 episodes). Employees rated their emotion experiences on features based on the componential emotion theory and also described the emotion events in their own words. The participants in the emotion episodes (*N*=179) study consisted of native white Afrikaans-speaking working adults. The sample consisted of participants from the white ethnicity group speaking Afrikaans within the Eastern Cape, Free State and North-West provinces and use was made of an availability sample.

The results indicated a three-dimensional structure (*evaluation-pleasantness, activation-arousal* and *power-control dimension*) was identified within a white Afrikaans-speaking working adult language group. The first dimension was an *evaluation-pleasantness dimension.* The second

dimension was an *activation-arousal dimension.* The third dimension was a *power-control dimension.*

Regarding the reporting of emotion episodes one hundred and ninety seven respondents reported 84 satisfying emotion episodes and 267 less satisfying emotion episodes that took place at work. Nine different categories of episodes for satisfying emotions experienced were mentioned. It consists of behaviour of work colleagues, acts of boss/superior/management, goal achievement, receiving recognition, workplace policy, task recognition, personal incidents, emotion involvement and subordinate behaviour. The three highest categories of satisfying emotions episodes were *"Goal Achievement"* (*N*=31), *"Receiving Recognition"* (*N*=20) and *"Personal Incidents"* (*N*=10). Goal achievement describes situations where job related targets or goals were met, and receiving recognition refers to positive feedback from managers, supervisors and work colleagues on meeting targets.

Nineteen different categories of episodes for less satisfying emotion episodes were mentioned. It consists of behaviour of work colleagues, acts of boss/superior/management, lack of goal achievement, lack of receiving recognition, workplace policy, task requirement, personal incidents, emotional involvement, subordinate behaviour, workload, work mistakes, customer behaviour, external environment, lack of control, physical well-being, involvement in disciplinary action, workplace strikes, wellness of colleagues and unfairness in the workplace. In the categories of less satisfying emotions episodes, the three highest were *"Behaviour of Work Colleagues"* (*N*=58), *"Acts of Boss/Superior/Management"* (*N*=47) *and "Task Requirement"* (*N*=33). The first two categories are appraised less satisfying behaviour towards oneself or others by work colleagues, managers, supervisors and customers. In terms of the categories of satisfying and less satisfying emotions episodes, less satisfying emotion episodes outnumbered satisfying emotions episodes by three to one.

By making use of a multi-componential emotion model, the results confirm that the four factors of pleasantness, power, arousal, and unpredictability, in that order of importance, are essential to satisfactorily determine the emotion experience and meaning of emotion terms. A three-dimensional emotion structure (e*valuation, arousal* and *power*) was found after determining the

meaning of emotion in the natural contexts in which they occur. The answer to the question if these two-dimensional emotion models, as stated in literature, are sufficient to cover the broad and often complex dynamics of emotion, is certainly no.

Recommendations for the organisation and future research were made.

OPSOMMING

Titel: Emosiestruktuur, emosiebetekenis en emosie-episodes van wit Afrikaanssprekende werkende volwassenes

Sleutelbegrippe: Afrikaans, emosieterme, vrylike lysting, emosieleksikon, prototipikaliteit, eendersheid, emosiestruktuur, emosiebetekenis, ondersoek, emosieteorie, kruiskultureel, dimensionaliteit, wit Afrikaner, emosie-episodes, universeel, twee-dimensioneel, bepaal, drie-dimensioneel, die dimensie van evalueringsaangenaamheid, die aktiverings-stimulasiedimensie, die magsbeheerdimensie, positiewe emosies, negatiewe emosies, werkplek, betroubaarheid, kulturele relativisme, natuurlike kontekste

Emosienavorsing is ‘n belangrike navorsingsonderwerp wat sodoende die meet van emosie in die werkplek noodsaak. Tydens verskeie pogings om die rol van emosies by die mens te bestudeer, te begryp en te meet, het verskillende navorsers verskillende teoretiese modelle geïdentifiseer om die inligting wat versamel is en die waarnemings wat gemaak is te bestuur. Om enige menslike gedrag te bestudeer of wetenskaplik te ondersoek, is dit noodsaaklik dat sodanige gedrag gemeet kan word, indien nie kwantitatief nie, dan wel kwalitatief.

Nogtans vind mens rakende emosienavorsing en –meting twee-dimensionele modelle. Die bestaande effek is beskryf met ‘n keuse van twee dimensies en strukture, nl. sirkumpleks, positiewe en negatiewe effek, gespanne en energieke stimulasie en agt kombinasies van aangenaamheid en aktivering. Hierdie twee dimensies en strukture meet ‘n mens se ervarings en rapporteer dit dan. Die vraag is of hierdie twee-dimensionele emosiemodelle voldoende is om die breë en dikwels komplekse dinamiek van emosies te meet.

Die begin van veelvuldige-emosie dimensiemodelle is deur navorsers aangemeld en hulle het ‘n drie-dimensionele struktuur in die emosiedomein aangemeld wat herinner aan die Evaluering-Potensie-Aktivering (EPA) dimensies in die konnotatiewe of affektiewe betekenis van woorde.In onlangse studies word dit betwyfel of twee-dimensionele modelle voldoende is om emosies omvattend te ondersoek. Die drie-dimensionele model is deur ander navorsers in studies van

kruiskulturele ooreenkomste nageboots. Die uitsorteer van ooreenkomste dui ook aan hoe belangrik dit is om emosies binne bepaalde kulturele kontekste te bestudeer. Dit is veral relevant om emosies in verskillende kulture in ‘n land soos Suid-Afrika te bestudeer waar ‘n verskeidenheidvan kulture en elf amptelike tale bestaan.

Navorsers het ‘n benadering gevolg wat die betekenis van emosies in verskillende kulturele groepe bestudeer het binne die konteks van 144 emosiekenmerke gemeet het deur ‘n komponensiële emosieteoriebenadering te volg. In die baanbrekersnavorsing in *Psyhological Science* gepubliseer, redeneer navorsers dat emosiebetekenis meer as net twee dimensies het. Die benadering deur die navorsers gevolg is getoets in ‘n studentepopulasie van drie taalgroepe, nl. Hollands-, Engels- en Franssprekende studente. Navorsers beweer dat hierdie ‘n empiriese en teoretiese metode is om die betekenisvan emosies oor kulture heen te bestudeer. Navorsing poog ook om, behalwe om die betekenis van emosie in bepaalde groepe te bestudeer, die betekenis van emosie binne die natuurlike konteks waarin dit voorkom te bestudeer. Die relevante natuurlike konteks vir die Industriële Psigologie is die werkomgewing. Dis daarom ook belangrik om die kategorieë van emosie-episodes binne die werkomgewing te ondersoek.

Die algemene doel van hierdie navorsing was dus a) om die emosieleksikon binne die werkersgroep van wit Afrikaanssprekende volwassenes te ondersoek; b) om die kognitiewe emosiestruktuur van hierdie kultuurgroep te bepaal; c) om die betekenis van emosie so omvattend moontlik te ondersoek (multidimensionele modelle van die betekenis van emosie) en d) om die betekenis en inhoud van emosie binne die werkplek te bepaal.

Navorsingsartikel 1

Die navorsing is in twee onafhanklike fases aangebied. Eerstens is ‘n vrye lysting van emosieterme saamgestel, en tweedens is die emosieterme prototipies gradeer deur Afrikaanssprekende mense in Suid-Afrika. Albei is toe as meetinstrumente gebruik. ‘n Opname is ontwerp om die navorsingdoelwitte te ondersoek deur van beskikbaarheidssteekproewe in twee studies gebruik te maak. Die deelnemers aan die vrye-lysting (N=70) en aan die prototipiese (N=70) studies het bestaan uit inheemse Afrikaanssprekende werknemers. Die steekproef het

bestaan uit deelnemers van die wit etniese groep in die Oos-Kaap, Gauteng, Vrystaat, Mpumalanga, Noord-Wes en KZN provinsies, en dit was ’n beskikbaarheidsteekproef.

Nadat die navorsing uitgevoer is, is die emosieterme wat die meeste voorgekom het, soos geïdentifiseer tydens die eerste studie, die vrye-lys fase, was gelukkig wees, hartseer wees, liefde, kwaad (woede) en haatlik. Die emosieterme wat die minste voorkom tydens die vrye-lystingfase was *ongemaklik, seer, seergemaak wees, simpatiek* en *skreeu*. Ooreenkomstig was die mees voorkomende prototipiese terme in Afrikaans *lekker, gatvol (genoeg gehad), kwaad,* en *om bang te wees*. Die vyf mins voorkomende prototipiese terme van die lys wat tydens die vrye lysting-fase saamgestel is, was *onvas*, *skugterheid*, *geboeidheid*, *naywer* en *opgetoënheid*.

Vanuit die inligting versamel in die navorsing blyk dit dat die emosieterme *lekker, genoeg gehad (gatvol) en liefdevol* uniek is aan die wit Afrikaanssprekende taalgroep. Hierdie terme is nie in enige voorafgaande navorsingstudie gerapporteer nie. Die resultate van hierdie studie dra by tot ‘n kruis-kulturele begrip van die emosiekonsepte binne die Afrikaanstalige taalgroepe in Suid-Afrika.

Navorsingsartikel 2

‘n Navorsingsontwerp is gebruik om die navorsingsdoelwitte te bereik deur gebruik te maak van beskikbaarheidssteekproewe in ‘n reeks van een studie. Deelnemers aan hierdie ooreenkomstigheidstudie (*N*=131)was inheemse Afrikaanssprekende werknemers. Die steekproef het bestaan uitdeelnemers vanuit die wit etniese groep wat Afrikaanssprekend is in die Oos-Kaap, Vrystaat, Mpumalanga, Noord-Wes, KZN en Noord-Kaapprovinsies, en gebruik is gemaak van ‘n beskikbaarheidssteekproef.

Resultate van Multidimensionele Skaling het ‘n drie-dimensionele kognitiewe emosiestruktuur aangedui. Die eerste dimensie was die evaluerings-aangenaamheidsdimensie. Hierdie dimensie evalueer die aangenaamheid teenoor die onaangenaamheid van ‘n situasie. Dit word gekenmerk deur intrinsieke skalings van aangenaamheid en doelwitbereikbaarheid, en aksieneigings van benadering teenoor vermyding. Die tweede dimensie wat ontluik het was ‘n magsbeheerdimensie. Hierdie dimensie is gekenmerk deur skaling van beheer, hoe magtig of

swak ‘n persoon voel wanneer ‘n bepaalde emosie ervaar word. Dit sluit in gevoelens van dominansie of onderwerping, die impuls om op te tree of te onttrek, en veranderings in spraak en parasimpatieke simptome. Die derde dimensie wat te voorskyn gekom het, was ‘n aktiverings-stimuleringsdimensie. Volgens navorsers word hierdie dimensie gekenmerk deur simpatieke opwekking, bv. vinnige hartklop en gereedheid vir aksie.

Hierdie studie het ‘n kognitiewe emosiestruktuur binne ‘n wit Afrikaanssprekende volwasse werkersbevolking in Suid-Afrika tevoorskyn gebring. Om waarde aan die veld van Bedryfsielkunde toe te voeg, is hierdie drie-dimensionele struktuur (evaluering-aangenaamheid-, magskontrole- en aktivering-stimuleringsdimensie) uiters belangrik en waardevol. Dit kan ook gebruik word as verwysing vir ander emosienavorsing. Indien dit akkuraat is soos in literatuur gestel, is daar drie emosiedimensiestrukture en nie slegs twee nie, en beteken dit dat navorsers nie voldoende put uit die ervaring van emosies nie.

Navorsingsartikel 3

‘n Navorsingsontwerp en beskikbaarheidssteekproef (*N*=120) in die Oos-Kaap, Vrystaat en Gautengprovinsies in Suid-Afrika is aangewend vir hierdie studie. Die Betekenismatriks is vertaal en terugvertaal en aangepas vir gebruik in Afrikaans.

Die Cronbach alfa koëffisiënte vir die emosieterme verkry. Volgens die resultate van die betekenismatriks verkry het die volgende emosieterme die meeste voorgekom: *afkeur 0.95; plesier 0,94;stres 0,92; blydskap 0,91; vreugde 0.91; bang 0,91; angstig 0,91* en *haat 0.90.* Die emosieterme wat die laagste binne die betekenis matriks voorgekom het was *medelye* 0,79; *trots 0,79* en *minagting 0,74.* Uit die 24 emosieterme van die betekenismatriks was agt (8) terme bokant 0,90 en 13 was tussen 0,80 en 0,89. Slegs drie (3) terme was tussen 0,74 en 0,79 (*medelye*, *trots* en *minagting).*

‘n Driefaktoroplossing is gevind wat vier emosiedimensies verteenwoordig (*evaluering, stimulasie/onvoorspelbaarheid* en *mag)* wat universeel is aan die emosiestrukture wat in Europese steekproewe gevind is. Faktortellings van die 24 emosies binne die Betekenismatriks dui op ‘n driefaktor-oplossing wat 62,2% van die variansie verduidelik. Die eerste faktor is

evaluering genoem en het 43.0% van die variansie verduidelik; die tweede is *stimulasie/onvoorspelbaarheid* genoem omdat dit stimulasie en onvoorspelbaarheid kombineer en verduidelik 11,0% van die variansie, en die derde is *mag* genoem en verduidelik 8,2% van die variansie.

Hierdie studie het die benadering gevolg wat die betekenisstruktuur van emosie in die steekproefgroep ondersoek het binne die konteks van 144 emosiekenmerke, deur gebruik te maak van ‘n komponensiële emosieteoriebenadering. ‘n Driedimensionele emosiestruktuur is gevind wat universeel was aan die emosiestrukture van drie taalgroepe in ‘n Europese steekproef. Die betekenis van emosies vir hierdie steekproefgroep is dus baie meer kompleks as die tweedimensionele modelle wat in literatuur gevind word. Ooreenkomstig die komponensiële emosieteoriebenadering, is die 144 kenmerke uiters belangrike boustene vir Industriële Psigologie sover dit bestudering van die betekenis van emosie betref.

Navorsingsartikel 4

‘n Navorsingsontwerp is in hierdie ondersoek gebruik. Die Episode Betekenismatriks is toegepas, en deelnemers het rapporteer oor die twee mees intense emosie-ervarings by die werk (in ‘n totaal van 358 episodes.). Werknemers het hulle emosie-ervaring gradeer volgens kenmerke gebaseer op die komponensiële emosieteorie, en het ook die emosieonele gebeure in hul eie woorde beskryf. Die deelnemers in die studie van emosieteorie-episodes (N=179) het bestaan uit inheemse wit Afrikaanssprekende volwasse werknemers. Die steekproef het bestaan uit deelnemers vanuit die wit etniese groep van Afrikaanssprekendes in die Oos-Kaap, Vrystaat en Noord-Wesprovinsies. ‘n Beskikbaarheidssteekproef is gebruik.

Resultate het ‘n drie-dimensionele struktuur geïdentifiseer (*evaluering-aangenaamheid, aktivering-stimulasie* en *mag-beheer*) binne ‘n wit Afrikaanssprekende groep werkende volwassenes. Die eerste dimensie is ‘n evaluering-aangenaamheidsdimensie. Die tweede is ‘n aktivering-stimulasiedimensie, en die derde ‘n mag-beheerdimensie.

Sover dit rapportering van emosie-episodes betref, het 187 respondente 84 bevredigende emosie-episodes rapporteer en 267 minder bevredigende emosie-episodes wat by die werk plaasgevind

het. Nege verskillende kategorieë is genome vir episodes van bevredigende emosies is aangemeld. Dit bestaan uit die gedrag van werkskollegas, optrede van die baas, senior of bestuur, doelwitbereiking, erkenning, beleid in die werkplek, taakherkenning, persoonlike insidente, emosiebetrokkenheid en ondergeskikte gedrag. Die drie hoogste kategorieë van bevredigende emosies was *doelwitbereiking* (*N*=31), *erkenning* (*N*=20) en *persoonlike insidente* (*N*=31.) Doelwitbereiking beskryf situasies waar werkverwante doelstellings bereik is, en erkenning verwys na positiewe terugvoer van bestuurders, toesighouers, seniors en kollegas betreffende die bereik van doelwitte.

Negentien verskillende kategorieë van minder bevredigende emosie-episodes is genoem. Dit bestaan uit die gedrag van werkskollegas, optrede van die baas,senior of bestuur, gebrek aan doelwitbereiking, geen erkenning, werkplekbeleid, taakvereistes,persoonlikeinsidente, emosionele betrokkenheid, ondergeskikte gedrag, werklading, werksfoute, klantegedrag, eksterne omgewing, gebrek aan beheer, fisiese welstand, betrokkenheid by dissiplinêre optrede, werkplekstakings, die welstandvan kollegas en onregverdigheid in die werkplek.

In die kategorieë van minder bevredigende emosie-episodes was die hoogste drie *gedrag van werkskollegas* (*N*=58)*; optrede van baas/senior/bestuur* (*N*=47) en *taakvereistes* (*N*=33). Die eerste twee kategorieë word beskou as minder bevredigende gedrag teenoor die persoon vanaf werkskollegas, toesighouers, bestuurders en klante. Minder bevredigende emosie-episodes was meer as drie keer soveel as bevredigende emosie-episodes.

Deur gebruik te maak van ‘n multikomponensiële model, bevestig resultate dat die vier faktore aangenaamheid, mag, stimulasie en onvoorspelbaarheid, in hierdie orde van belangrikheid, noodsaaklik is ten einde die emosie-ervaring en betekenis van emosieterme bevredigend vas te stel. ‘n Drie-dimensionele emosiestruktuur (*evaluering, stimulasie* en *mag)* is gevind nadat die betekenis van emosie vasgestel is binne die natuurlike konteks waar hulle voorkom. Die antwoord op die vraag of sodanige twee-dimensionele emosiemodelle soos in literatuur genoem voldoende is om die breë en dikwels komplekse dinamika te omsluit, is ‘n besliste nee.

Aanbevelings is gemaak vir die organisasie en toekomstige navorsing.

CHAPTER 1

Emotion structure, emotion meaning and emotion episodes of white Afrikaans-speaking working adults

INTRODUCTION

This research focuses on the emotion structure, emotion meaning and emotion episodes of white Afrikaans-speaking working adults in South Africa.

Chapter 1 contains the problem statement and research objectives in which the general objective and specific objectives are set out. The research methodology will be described and finally the division of chapters will be explained.

1. PROBLEM STATEMENT

During the last decade of the 20th century emotion research has focused increasingly on affect in the workplace (Weiss & Cropanzano, 1996). During the same period the concept of emotional intelligence and emotional labour has aroused great interest. Emotional intelligence provides useful information on one's cognitive processes to manage one's health and psychological adaptations (Mayer & Salovey, 1997), and emotional labour refers to the effort one invests in expressing or coping with one's emotions to achieve objectives pertaining to one's work (Hochschild, 1983).

Apart from these emotion research topics, researchers became involved in in-depth analyses of the causes of specific emotions and moods at work (Ashkanasy, Härtel, & Daus, 2002; Ashkanasy, Härtel, & Zerbe, 2000; Brief & Weiss, 2002; Briner, 1999; Payne & Cooper, 2001). Weiss and Cropanzano (1996) presented the affective event theory as a framework for studying affective events (emotion episodes). However, research studies on the emotion episodes at work are limited, but important for the study in the industrial psychology domain as almost every occupation consists of an emotional content (Brotheridge & Lee, 2003).

The growing interest in emotions in the workplace is a result of the realisation that emotions are linked to vital organisational outcomes such as organisational commitment (Allen & Meyer, 1990), work engagement (Schaufeli, Martinez, Pinto, Salanova, & Bakker, 2002), burnout (Maslach, 1982) and coping at work (Lazarus & Folkman, 1984). According to Weiss (2002) affective events at work have real emotional impact on employees. Emotions

are also related to motivation in the workplace that must surely be influenced by daily emotional episodes at work (George & Brief, 1996). Therefore, the emotions experienced at work are likely to arouse strongly felt emotions in all spheres of life (Weiss & Cropanzano, 1996). The conclusion can be drawn that emotion research is an important research topic and accordingly the measurement of emotion in the workplace becomes essential (Ashkanasy, Zerbe & Härtel 2002; Brotheridge & Lee, 2003; Weiss & Cropanzano, 1996).

In attempting to study, understand and measure the role of emotions, various researchers have identified different theoretical models to manage the information they have gathered and the observations they have made (Ekman, 1979; Fisher, 1998; Izard, 1991; Russell, 1980; Watson & Tellegen, 1985). The existing affect has been described with a choice of two dimensions and structures, i.e. Russell's (1980) circumplex, Watson and Tellegen's (1985) positive and negative affect, Thayer's (1986) tense and energetic arousal, and Larsen and Diener's (1992) eight combinations of pleasantness and activation. These two-dimensional structures measure a person's subjective experiences and, thereafter, report it.

There are three major approaches with two-dimensional structures. The first is the activation approach, also known as arousal, energy, tension and activity. Activation is prominent in psychology writings (Mandler, 1984; Zillmann, 1983). The second is the emphasis on valence. Feldman (1995), and McConville and Cooper (1992) state that valence sometimes is the only general factor found in self–reports of affect. With introspection of the valence dimension, pleasure-displeasure is an elementary dimension of alert feeling (Reisenzein, 1992). A third approach includes valence and activation as separate and equally emphasised dimensions within one descriptive structure (Bradley, 1994; Osgood, May, & Miron, 1975; Russell, 1978).

When one investigates Watson and Tellegen's (1985) psychometric research on positive and negative affect, it points not to a single-dimension, but to a two-dimensional structure. In the study conducted in 1999 by Yik, Russel and Feldman-Barrett, they interpreted both dimensions in terms of valence-high versus low positive affect and high versus low negative affect. Thayers's (1986) psychological work on activation also led not only to a single activation-deactivation dimension, but to a two-dimensional structure. In the study of Yik et

al. (1999), Watson and Tellegen's (1985) on the structure of positive and negative affect and Thayer's (1986) structure of tense and energetic activation, the hypothesis describes one and the same space. The two structures describe the same space captured by Russell' (1980) and Larsen and Diener's (1992) pleasantness-unpleasantness and activation-deactivation. It gives equal emphasis to both valence and activation. Research by Rusell (1993) confirmed these two dimensions of valence and activation.

Russell (1993) rated the similarity of 28 emotion terms among several language groups (English, Gujarati, Croatian, Japanese and Chinese). Two dimensions, namely pleasure-displeasure and arousal-sleep, emerged. Two-dimensional models of emotion, namely valence and arousal were also identified by Feldman Barrett & Fossum (2001). Based on this research, the focus of emotion investigation largely falls on negative and positive affectivity. The majority of literature therefore indicates the use of two-dimensional emotion models only (Judge, Parker, Colbert, Heller, & Ilies, 2001; Zautra, Affleck, Tennen, Reich, & Davis, 2005). Gooty, Gavin and Ashkanasy (2009) therefore argue that research has been too narrowly confined to studies of positive and negative mood and affect (Ashkanasy et al., 2002). However, although the emphasis in emotion research is on two-dimensional models of emotion, three emotion dimensional models have been reported in literature.

The start of multiple emotion dimension models were reported by Osgood and colleagues in 1975, who identified a three-dimensional structure in the emotion domain that is suggestive of Evaluation-Potency-Activation (EPA) dimensions in the connotative or affective meaning of words (Osgood et al., 1975). Therefore, the sufficiency of two-dimension models to comprehensively investigate emotions can be questioned. The three-dimensional emotion model of Osgood was replicated in cross-cultural similarity sorting studies by Fontaine, Poortinga, Setiadi and Markam in 2002.

Fontaine et al. (2002) investigated the cognitive structure of emotions in Indonesia and the Netherlands in a series of three studies. Sets of 120 emotion terms were selected based on local ratings of prototypicality for emotion. The similarities were sorted into a three-dimensional model (evaluation, arousal, dominance). Fontaine et al. (2002) conducted a study in which a total of 109 Indonesian and 105 Dutch students participated. These studies

identified three dimensions, namely pleasantness or evaluation (separating positive from negative emotion terms), dominance or potency (separating anger terms from fear and sadness terms), and arousal or activation (separating sadness from fear and anger terms). What is also important to conclude here is not only the trend of investigation of multiple emotion dimension models, but also that the reported research is successfully investigating the meaning of emotion across cultures. However, one of the most significant issues of the cross cultural studies in the past has been the conflict between universalism and cultural relativism of emotion experiences.

The cultural boundary between universalism and relativism is a subject of interest and it may set the tone between different cultures (Limaye & Victor, 1995). Therefore, it is important to take note of the differences between universalism and relativism. Universalism is "... where people believe what is true or good can be discovered, defined and applied everywhere" (Hoecklin, 1994, p. 41). However, circumstances and relationships mediate what is right or good in a particularistic society. Relativism is the concept that points of view have no absolute truth or validity, having only relative, subjective value according to differences in perception and consideration (Dixon, 1977). Relativism also maintains that there is no absolute truth, only truth relative to the individual, or to a particular time or culture, or both (Dixon, 1977).

It is evident from these works that circumstances, relationships, the society one lives in and their culture play very important roles in the way that emotions are expressed and understood. Already in 1986 and in 1997 the importance of addressing emotion issues and experiences in cultural groups was argued by Frijda (1986) and Mesquita, Frijda, and Scherer (1997). Studying emotion in different cultures is especially relevant in a country such as South Africa that has a diverse variety of cultures and eleven official languages. After experiencing abstract events such as insult, danger and loss the emotions felt are similar in people from different cultures (Boucher & Brandt, 1981; Brandt & Boucher, 1984; Ekman, 1984; Roseman, 1984; Sullivan & Boucher, 1984). Culture also sets standards for how openly you can display your emotions, for example whether it is acceptable to cry in public, or how much pride you can show before it seems rude or like bragging (Kalat & Shiota, 2007; Neimeyer, 1995). Furthermore, emotions may also be admired or despised by different cultures, in other

words some emotions may be seen as particularly worthy or unworthy (Mesquita & Ellsworth, as cited in Scherer, Schorr & Johnstone, 2001).

The conclusion can now be drawn that the approach to determine multiple emotion dimensions across cultures therefore should be noted by the emotion research community and should be applied in emotion research studies not only internationally but also in national research studies. An approach must be followed to investigate the meaning of emotions in cultural settings that will establish credibility in establishing universalities, at the same time pinpointing cross-cultural differences that are indeed unique to the culture involved (Herrman & Raybeck, 1981). A specific need exists in South Africa with its eleven official languages and cultures.

South Africa has been referred to as the 'rainbow nation', a title which illustrate the country's cultural diversity. The population of South Africa is one of the most complex and diverse in the world. Of the 45 million South Africans, nearly 31 million are Black, 5 million White, 3 million Coloured and one million Indian (Greeff, 2007). The first person recorded to have identified himself as an *Afrikaner* was Hendrik Biebouw, who, in March 1707, stated *Ik ben een Afrikander* (I am an African), and did not want to leave South Africa (Heese, 1971).

Afrikaners are an Afrikaans-speaking ethnic group in Southern Africa descended from almost equal numbers of Dutch, French and German settlers, and whose native tongue is Afrikaans (Greeff, 2007). Although Dutch remained an official language, the new constitution in 1961 finally declared Afrikaans and English to be the two official languages (Giliomee, 2003). The term Afrikaner as used in the 20th and 21st century context refers to all white Afrikaans-speaking people, i.e., those of the larger Cape Dutch origin and of the smaller Boer origin (Greeff, 2007). Although the history of Afrikaans has its roots in seventeenth century Dutch, it has been influenced by many languages, including English, Malay, German, Portuguese, French and some African languages. The Afrikaans language changed over time from the Dutch spoken by the first white settlers at the Cape (Giliomee, 2003), and was mainly the spoken language for people living in the Cape (Giliomee, 2003). It is the primary language used by two related ethnic groups in South Africa, the Afrikaners and Coloureds, also

referred to as *kleurlinge* or *bruinmense* (the latter including Basters, Cape Malays and Griqua) (Giliomee, 2003).

Although a number of prototypicality research studies are reported in different cultural groups such as the Setswana group (Fourie, 2009) and Sepedi, Xitsonga and Tshivenda (Nicholls, 2008), there is a lack of knowledge on the emotion lexicon in the white Afrikaans-speaking language group - the third biggest language group in South Africa. As the Afrikaner is a relatively young and unknown cultural group, there is little or no data about the Afrikaans-speaking emotion terms. In 2007, Fontaine, Scherer, Roesch and Ellsworth had a great deal of success when investigating the meaning of emotion in a student population of three different language groups, namely Dutch-, English- and French-speaking students.

Fontaine et al. (2007) followed an approach that studied the meaning of emotion in different cultural groups in the context of 144 emotion features using a *componential emotion theory approach*. Fontaine et al. (2007) argue in this groundbreaking research that was published in *Psychological Science* that emotion meaning has more than only two dimensions. The approach postulated by Fontaine et al. (2007) (based on the theory of Scherer, Wranik, Sangsue, Tran, & Scherer, 2004) was tested in a student population of three language groups, namely Dutch-, English- and French-speaking students. According to Fontaine et al. (2007) this is an empirical and theoretical method to study the meaning of emotions across cultures. The results of this study indicated a *four*-dimensional model of emotion, more than the two dimensions to which research normally refers (valence and arousal). In order of importance, these dimensions (according to Fontaine et al., 2007) are firstly evaluation pleasantness, secondly potency-control, thirdly activation-arousal, and fourthly unpredictability. It is clear that the research issue emerging is that the meaning of emotion (as possibly two, three or multiple dimensional models) must be investigated in different cultural settings for example in the Afrikaan speaking language group in South Africa.

Apart from the above-mentioned research issues, Gooty et al. (2009) indicate four fundamental problems with emotion research that need to be resolved. Firstly one needs to define emotion consistently (Ashkanasy, 2003; Briner & Kiefer, 2005) to identify and cover emotions as a concrete domain of study (Brief & Weiss, 2002). Secondly one needs to deal

with discrete emotions (Barsade & Gibson, 2007; Briner & Kiefer, 2005). Thirdly one needs to deal with emotions as dynamic phenomena (Brief & Weiss, 2002). Lastly and very importantly, one needs to deal with discrete emotion in the natural settings in which they occur. The natural setting for the experience of emotion in the field of industrial psychology is the workplace. Johns (2006), in agreement with Lazarus (1995), argues that theories of emotions as well as empirical research need to take into account the context wherein emotions occur as well as differences between individuals. Determining the emotion episodes of employees in a work setting therefore becomes an important research topic.

If it is true that there are three or four and not only two emotion dimension structures, research is lacking and not investigating the experience of emotion sufficiently. Therefore, further research into the meaning of emotion is essential in specific cultural groups. If this can be fundamentally investigated, the application of such study in the natural settings, such as the emotion episodes in the work context (also argued by Gooty et al., 2009), can be achieved.

Based on the problem statement the general goal of this study will therefore be a) to investigate the emotion lexicon in the white Afrikaans-speaking language group, b) to determine the cognitive emotion structure of this cultural group, c) to investigate the meaning of emotion as comprehensively as possible (multidimensional models of the meaning of emotion), and c) to determine the meaning and content of emotion episodes in the workplace. In the remainder, these research issues will be further highlighted and lastly the derived research questions will be presented:

a) In order to investigate emotions in cultural settings, the emotion lexicon and cognitive emotion structure within that culture must be determined (Fontaine et al., 2002; Shaver, Schwartz, Kirson, & O'Connor, 1987). The approach to be followed is the prototype approach (Rosch, 1975; Shaver, Murdaya, & Fraley, 2001; Shaver et al., 1987). Fehr and Russell (1984) point out that the concept "emotion" has an internal structure and can be reliably sorted from better to poorer examples of emotion (prototypicality). This ranking indicates how willingly these emotions will come to mind when asked to list emotions, as well as the probability of it being labeled as an emotion if confronted by the concept. There

are similarities and differences in the use of the emotion lexicon. It is therefore important to investigate the cognitive structure of emotions whereby the emotion terms are sorted into categories relevant to their specific emotion family groups.

b) The cognitive representation of emotion structures in cultures is based on differences and similarities between various emotion terms (Shaver et al., 1987). Self-report structures are essential, especially within cross-cultural studies in investigating the conceptual organisation of emotions (Church, Katigbak, Reyes, & Jensen, 1999). Cross-cultural similarities as well as differences exist across all aspects and dimensions of emotions (Mesquita & Frijda, 1992). Moving from empirical methods to determine the cognitive structure of emotions, towards a comprehensive understanding of the manifestation of emotions, will give the answer to the *meaning* of these terms in the context of all emotion features. Therefore, a theory-based approach can be followed to provide an emotion structure in a specific cultural sample.

c) The componential emotion theory approach offers a comprehensive framework to study the meaning of emotions across cultures. The meaning of emotion is investigated in the context of emotion features. According to this theory, emotions are a synchronised process consisting of relationships among various components, such as appraisals, psycho-physiological changes, expressive behaviours, action–tendency and subjective experiences that specific and relevant situational antecedents elicit (Frijda, 1986; Mesquita et al., 1997). This approach also offers a comprehensive way to understand the different aspects of emotions in all kinds of everyday situations. The componential approach allows that some emotion components may be cross-culturally similar and some different (Breugelmans, 2004). Frijda, Markham, Sato and Wiers (1995) argued that instead of emotion words, emotion components could be used for cross-cultural studies. Smith (2005) believes the integrated functioning of a human being manifests itself as the emotional dimension. These together are the sum of the meaning of emotions - the building blocks of emotions. As a result, one wants to know if the meaning structure of emotions is evident in the context of the work environment. Therefore, to add value to the world of Industrial Psychology, the meaning of emotions in emotion episodes in the workplace needs to be measured.

d) In order to gain an understanding of the nature of emotions in the context of work settings, it is necessary to investigate if a meaning structure of emotion can be determined in the context of the affective events/emotion episodes that Afrikaans working adults experience. According to the affective events theory (Weiss & Cropanzano, 1996) workplace emotions are either positive or negative. The Affective Event Theory is a model which provides a useful framework for the study and understanding of emotions at work (Weiss & Cropanzano, 1996). These emotions are triggered by events and conditions at the workplace that result in emotion driven behaviours and attitudes. The theory entails that certain workplace characteristics induce certain events, causing specific emotional reactions and in turn influence work attitudes and behaviours (Grandey, Tam & Brauburger, 2002). Therefore, the theory suggests that affect varies over an episode and is influenced by characteristics, by moods and factors in the work environment. According to this, these characteristics then influence the approach with which working adults react to dealings of emotions in the workplace (Ashton-James & Ashkanasy, 2005). To regulate their emotional responses, working adults can then change and regulate their feelings and emotions in order to express it in an appropriate way at work (Grandey, 2000). To add to the understanding of emotions in context, the features of the componential emotion theory can be used in order to determine the meaning of these episodes.

This thesis will provide an answer to a broader picture and understanding of what emotions consist of in a specific cultural sample and thus add value to the field of Industrial Psychology. The question "Is the building block to investigate emotions family just a two-dimensional emotional structure and merely subjective experiences and facial expressions, or are there more emotional building blocks in the emotion processes family (components) of which emotions form part?" will be addressed. The general research aim of this study is to establish a broader interpretation of emotions.

This study will take place in four consecutive studies. The first three studies are *linguistic* and the fourth study is *working on organisational issues*. Therefore, the first three studies are addressing fundamental issues such as what are the emotion terms in the white Afrikaans-speaking working adult group, and what is the cognitive emotion structure in white Afrikaans-speaking working adult group? In the third study two questions may occur: firstly

what is the meaning of emotions, and secondly what is the emotion structure of white Afrikaans-speaking working adults? The fourth study is an application of the meaning of emotion in the work context. A question may be raised whether a three-dimensional emotion structure will be found when the meaning of emotion of the white Afrikaans-language group is investigated. A schematic representation of the order and fit of the four research article are presented in Figure 1:

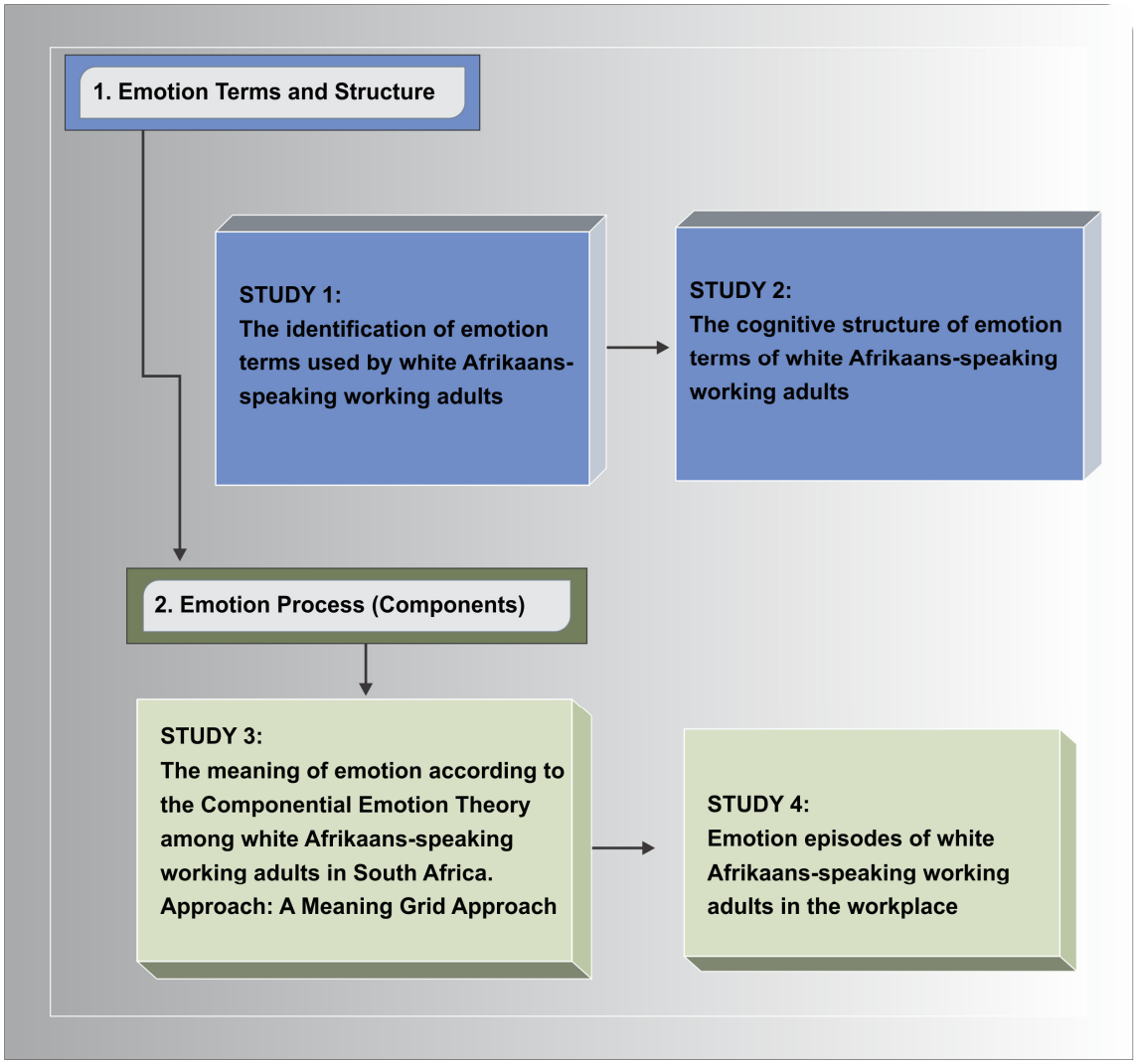


Figure 1: Schematic representation of the study outline

The following research questions can be formulated based on the above-mentioned description of the research problem: The research questions for each study are stated next to the heading of each particular article.

Research Article 1: The identification of emotion terms used by white Afrikaans-speaking working adults

- How are the classical and prototypical approaches to study the emotion lexicon conceptualised in the research literature?
- What are examples of prototypicality studies as indicated by the research literature?
- What are the emotion terms that are used in a white Afrikaans-speaking working adult group?
- What are the most and least prototypical emotion terms that are used in a white Afrikaans-speaking working adult group?
- What are the conclusions and the recommendations of the results of this research study?

Research Article 2: The cognitive structure of emotion terms of white Afrikaans-speaking working adults

- How are emotion dimensions and the interplay of culture and emotion conceptualised in the research literature?
- What are examples of similarity rating studies as indicated by the research literature?
- Who are the white Afrikaans-speaking working adult language group in South Africa as conceptualised by the research literature?
- Are measures of a similarity rating task reliable?
- Will the cognitive structure in a white Afrikaans-speaking working adult sample include the evaluation-pleasantness dimension?
- Will the cognitive structure in a white Afrikaans-speaking working adult sample include the activation-arousal dimension?
- Will the cognitive structure in a white Afrikaans-speaking working adult sample include the power-control dimension?
- What are the conclusions and the recommendations of the results of this research study?

Research Article 3: The meaning of emotion according to the Componential Emotion Theory among white Afrikaans-speaking working adults in South Africa. Approach: A Meaning Grid Approach

- How are emotions defined in the literature research?
- What are the different components included in the componential emotion theory to study the meaning of emotion based on the literature research?
- How can the meaning of emotion be studied through a componential emotion approach lens?
- Will the emotion terms as featured in the Meaning Grid be reliable and will it denote satisfactory alpha coefficients when measured against results of previous Meaning Grid studies: 0,80 and higher?
- Will the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample include the evaluation-pleasantness dimension?
- Will the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample include the power-control dimension?
- Will the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample include the activation-arousal dimension?
- Will the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample include the unpredictability dimension?
- What are the conclusions and the recommendations of the results of this research study?

Research Article 4: Emotion episodes of white Afrikaans-speaking working adults in the workplace

- What is the current two-dimensional emotion measurement that is based on the literature research?

- What are the emotions and emotion episodes at work reported in a review of the literature?
- How are the Affective Events Theory conseptualised in literature as a frame of reference to study emotion episodes in the workplace?
- Will emotion episodes consist of a two-dimensional or multiple-dimensional factorial model when measured in a work context in the white Afrikaans-speaking working adult language group in South Africa?
- What are the different categories of emotion episodes in a work context in the white Afrikaans-speaking working adult language group in South Africa?
- What are the conclusions and the recommendations of the results of this research study?

2. RESEARCH OBJECTIVE

The research objectives will be divided into general and specific objectives. The following general and specific aims are set for this research.

2.1 General objective

The general objective of this research is to study the experiences of white Afrikaans-speaking working adults in relation to action tendencies, appraisal of events, bodily sensations, facial and vocal expression and emotional experiences.

2.2 Specific objectives

The research objectives will be achieved by using a survey design. (Keppel, Saufley, & Tokunaga, 1992). The survey design has the advantage of obtaining a large amount of information (free listing of emotion terms) from a group of 120 Afrikaans-speaking people, it is economical and the research information can be regarded as accurate (within sampling error). Disadvantages of this design include that it is time- and energy-consuming (Kerlinger & Lee, 2000). Despite the negativity surrounding the use of qualitative research, Woods and

Catanzaro (1988) indicated that the validity of qualitative research is one of its biggest advantages.

The specific objectives of the different research articles are:

Research Article 1

The identification of emotion terms used by white Afrikaans-speaking working adults

- To conceptualise the classical and prototypical approaches to study the emotion lexicon in the research literature.
- To report on examples of prototypicality studies as indicated by the research literature.
- To determine the emotion terms that are used in a white Afrikaans-speaking working adult group.
- To determine the most and least prototypical emotion terms that are used in a white Afrikaans-speaking working adult group.
- To draw conclusions and formulate recommendations based on the results of the research study.

Research Article 2

The cognitive structure of emotion terms of white Afrikaans-speaking working adults

- To conceptualise emotion dimensions and the interplay of culture and emotion as indicated by the research literature.
- To report on examples of similarity rating studies as indicated by the research literature.
- To conceptualise the white Afrikaans-speaking language group in South Africa as indicated by the research literature.
- To determine the reliability of measures of a similarity rating task.
- To determine if the cognitive structure in a white Afrikaans-speaking working adult sample includes the evaluation-pleasantness dimension.

- To determine if the cognitive structure in a white Afrikaans-speaking working adult sample includes the activation-arousal dimension.
- To determine if the cognitive structure in a white Afrikaans-speaking working adult sample includes the power-control dimension.
- To draw conclusions and formulate recommendations from the results of this research study.

Research Article 3

The meaning of emotion according to the Componential Emotion Theory among white Afrikaans-speaking working adults in South Africa. Approach: A Meaning Grid Approach

- To conseptualise how emotions are defined in the literature research.
- To present the different components included in the componential emotion theory to study the meaning of emotion based on the research literature.
- To indicate how the meaning of emotion can be studied through a componential emotion approach lens.
- To determine if the emotion terms as featured in the Meaning Grid are reliable and if it will denote satisfactory alpha coefficients when measured against results of previous Meaning Grid studies: 0,80 and higher.
- To determine if the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the evaluation-pleasantness dimension.
- To determine if the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the power-control dimension.
- To determine if the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample includes the activation-arousal dimension.
- To determine if the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample includes the unpredictability dimension.

- To draw conclusions and formulate recommendations based on the results of this research study.

Research Article 4

Emotion episodes of white Afrikaans-speaking working adults in the workplace

- To give an overview of current two-dimensional emotion measurements based on literature research.
- To conceptualise emotions and emotion episodes at work from a literature review
- To give an overview of the Affective Events Theory as a frame of reference to study emotion episodes in the workplace.
- To determine if emotion episodes consist of a two-dimensional or multiple-dimensional factorial model when measured in a work context in the white Afrikaans-speaking working adult language group in South Africa.
- To determine the different categories of emotion episodes in a work context in the white Afrikaans-speaking working adult language group in South Africa.
- To draw conclusions and formulate recommendations based on the results of the research study.

3. RESEARCH METHOD

This research method consists of a literature review and empirical study. The results of this study will be presented in the form of four research articles.

3.1 Literature review

The literature review focuses on previous research on emotion, the prototypicality thereof, similarity differences in their application in the cross-cultural context, the meaning of emotion terms and emotion episodes at work. An overview will be given of the conceptualisation of this concept as well as the experience thereof from the literature. The reader will note that a literature study will be conducted for the purposes of the article.

3.2 Empirical study

The empirical study will consist of the research design, the participants, data gathering, data analysis and ethical aspects with reference to each of the four research articles.

3.3 RESEARCH DESIGN

Research Article 1: The identification of emotion terms used by white Afrikaans-speaking working adults

The research will be conducted in two independent phases, namely the free listing followed by the prototypicality rating of the emotion terms for the white Afrikaans-speaking working adults in South Africa. The main source in each cultural group will be a free listing task (Fontaine, Poortinga, Setiadi & Suprapti, 1996).

<u>Study 1:</u> Free Listing

Free listing of emotion terms

The free listing questionnaire will be presented to white Afrikaans-speaking working adults and they will be requested to list as many Afrikaans emotion terms as come spontaneously to mind within ten (10) minutes. According to Bretherton and Beeghly (1982); Ekman (1984); Epstein (1984); Izard (1977) the results for the free listing task indicated that for more than 300 participants, basic emotions of happiness, anger, sadness, love, fear and hate were emotions which most readily come to mind. This list of basic-level emotion terms corresponds roughly to emotion theorists' lists of basic or primary emotion terms. The free listing task will provide many emotion terms which will be further scaled down by using the prototype approach.

Participants

The study population of the first phase (free listing of emotion terms) will consist of a convenience sample of white Afrikaans-speaking working adults from the Eastern Cape, Gauteng, Free State, Mpumalanga, North-West, KZN and the Western Cape provinces in

South Africa. In terms of gender, men and women will be included. The age of the participants will be from the age of eighteen and older. The participants' first language will be Afrikaans and they will participate on a voluntary basis.

Measuring instrument and procedure

The free listing questionnaire will be utilised as the *first step* in this study. Respondents will be asked to list as many emotion terms they can think of in ten (10) minutes. Terms mentioned at least five times during the free listing exercise will be accepted and translated into English in order to construct a basic list of English emotion terms (Basic English Emotion List or BEEL), and then the data set will be cleaned by eliminating redundancy. All but one of each set of words formed from the same root (e.g. hate and hatred) will be removed. Furthermore, these words will be converted into nouns. A term that is clearly not an emotion term (e.g. terms that refer to antecedents like awake or the mere expressive behaviour like tears, crying etc.) will be rejected. The method followed in this study will be based on the research of Shaver et al. (1987).

Procedure

The free listing questionnaires will be compiled. Ethical aspects of the research will be discussed with the participants. The test battery will be administered in Afrikaans. Respondents will be able to respond (list emotion terms) in their mother tongue. Respondents will be tested in groups consisting of a maximum of 5 participants. A standardised procedure will be followed by a qualified psychologist in order to administer the test battery.Each respondent will have his or her own desk, chair as well as the necessary stationery.The auditorium will be properly lit and ventilated. The supervised and controlled test session will lasts for 15 minutes.

Statistical Analysis

Terms mentioned at least five times across all the participants will be accepted and translated into English. Free listing emotion words that will be reported by the respondents will be captured in Excel. A macro will be developed for the Excel sheet, calculating the frequency of emotion words, the number of participants that reported each emotion term, the ranking of emotion terms per respondent and the average number of emotion terms reported, as well as

the median per emotion term. The data will be cleaned by eliminating redundancy, meaning that all but one set of words formed from the same root (e.g. hate and hatred) will be removed.

Study 2: Prototypicality

There is confusion between the frequency with which emotion terms are used in daily language on the one hand and the adequacy for the concept of emotion in general use on the other hand. Therefore a broader list of terms will be compiled rated on the concept of emotion. This is just another way to identify the emotion lexicon. It is necessary to determine the extent to which these terms are representative of the emotion domain of the white Afrikaans-speaking working adult group in South Africa.

Participants

The study population in the second phase (prototypicality ratings of the Extended English Emotion List) will consist of a convenience sample of language experts in the Afrikaans language from different occupations (N=70). The participants will be from the Eastern Cape, Free State and the North-West Province. In terms of gender, men and women will be included. The age of the participants will be from the age of eighteen and older. The participants' first language will be Afrikaans and they will participate on a voluntary basis.

Measuring instrument

In order to ensure a comprehensive coverage of the emotion domain, the three lists of emotion terms obtained in study 1 will be extended in with terms translated from the emotion list reported by Shaver et al. (1987), the Indonesian and Dutch emotion lists reported by Fontaine et al. (2002), as well as the 24 prototypical emotion terms (emotion terms from the Meaning Grid instrument) commonly used in both emotion research and daily language as reported by Scherer (2005), to construct an Extended English Emotion List (EEEL), which could reasonably be considered emotion words. A representative set (24 Meaning Grid terms) will be selected on the basis of (1) frequent use in the emotion literature, (2) consistent appearance in cross-cultural free listing and prototypicality rating tasks and (3) self-reported emotion words from a large scale Swiss household study (Scherer et al, 2004).

The EEEL will again be translated into English, in order for native-speaking individuals to rate the prototypicality of each emotion term of the Extended Emotion List. In translating the terms, duplicate terms will be removed. The final lists of emotion words will be rated by native speaking experts on prototypicality for the concept of emotion. The final prototypicality questionnaire will be used to rate the emotion terms of the Extended Emotion List on prototypicality for the concept of emotion. Three versions of the prototypicality questionnaire will be used where emotion terms are listed in randomised order. The scales will be 1 (*certainly not an emotion*), 2 (*unlikely to be an emotion*), 3 (*likely to be an emotion*), and 4 (*certainly an emotion*). Experts will be able to do this reliably. The method followed in this study will be based on the research of Shaver et al. (1987).

Procedure

The data will consists of all emotion terms from the free listing (emotion terms reported at least 5 times across all the participants). An Excel spreadsheet will be constructed to capture the data; emotion terms will be indicated in rows and raters in the columns. The following rating scale will be utilised, based on the question: To which extent is this emotion terms an example of the concept of emotion? 0 = definitely not an example, 1 = a poor example, 2 = a reasonable example, 3 = a good example, 4 = an excellent example. Each page will consist of 20 emotion terms: the best example on each page will be selected, circled and rated, thereafter the worst example will be selected, circled and rated, then all the other terms will be circled and rated. All the emotion terms will be randomised to enhance the reliability of the research process.

Statistical Analysis:

The mean average score on each emotion term will be calculated in Excel. This will be sorted from the highest to the lowest mean average score so that the most prototypical emotion terms will be indicated at the top of the list and the lowest prototypical emotion terms at the bottom of the list. Making use of the SPSS program (Statistical Package for the Social Sciences software program) (SPSS, 2003), inter-rater reliability values will be computed for each of the emotion terms. The participants (raters) with a score of less than 0,20 on the combined score will be removed and these participants will have a distinctive understanding of the emotion terms.

Research Article 2: The cognitive structure of emotion terms of white Afrikaans-speaking working adults

Participants

The study population (similarity rating task) will consist of a convenience sample (N=120) of the white Afrikaans-speaking working adults in South Africa. In terms of gender, men and women will be included. The age of the participants will be from the age of eighteen and older. These white Afrikaans-speaking working adults will be from the Eastern Cape, Gauteng, Free State, Mpumalanga, North-West and the Western Cape provinces.

Measurement instrument

The cognitive structure of emotions will be investigated by means of similarity rating of the emotion terms in order to conceptualise the cognitive representation of differences and similarity between various emotion terms based on the research of Shaver et al. (1987). The list of prototypical emotion terms per language group will be used to draft the Similarity Rating Questionnaire. The 56 emotion terms with the highest average scores based on prototypicality ratings will be included in the first step of compiling the questionnaire. Similarity Rating Questionnaires will also contain the 24 emotion terms (Meaning Grid emotion terms) as reported by Scherer (2005), regardless of the average score ratings. Thus, if an emotion in the highest 56 emotion terms corresponds with one of the 24 emotion terms of the Meaning Grid, the next emotion term with the highest average rating will be included. This will result in a final list of 80 terms that will be used to construct the Similarity Rating Task.

Emotion terms will be alphabetically listed and then transposed in Excel to combine the emotion terms into 3160 pairs of emotion terms. Using SPSS for Windows, these pairs of emotion terms will be randomised. These pairs will then be captured into eight (8) versions for the Similarity Rating Questionnaire, each containing 395 pairs of emotion terms. Respondents will be asked to rate these combinations in terms of how closely related they are in meaning in their language. Respondents must also indicate the relationship in meaning between the emotion terms using an 8-point response scale. The scales will be 1 (*completely opposite in meaning (antonyms)*), 2 (*very opposite in meaning*), 3 (*moderately opposite in*

meaning), 4 (*slightly opposite in meaning*), 5 (*slightly similar in meaning*), 6 (*moderately similar in meaning*), 7 (*very similar in meaning*) and 8 (*completely similar in meaning (synonyms)*). The instructions furthermore will mention that they need to concentrate and that every pair must be rated.

Procedure

The final similarity sorting questionnaire will be consist of the 24 Meaning Grid emotion terms and the 56 most prototypical terms. The number of terms and number of persons that will be used, are as follows. In total 80 emotion terms will be rated for similarity – every term will be rated against every other term. That calculates up to a total of 3160 pairs of words. The pairs of words will be divided into eight versions so that each participant will rate 395 pairs of words on similarity. In order to achieve a rating total of 120 participants every version will be administered to 15 or 16 participants. The rating scale that will be used, consists of the following: completely similar in meaning (synonyms), very similar in meaning, moderately similar in meaning, slightly similar in meaning, slightly opposite in meaning, moderately opposite in meaning, very opposite in meaning, completely opposite in meaning (antonyms).

A reminder will be placed on each page, stating: response scale + please rate all terms + please remain concentrated. As mentioned there will be 8 versions (Version 1 to Version 8): pairs must be randomly assigned across eight versions (save key) [ideally complete randomisation of terms and persons. Label each version (Version 1-8 to Version 8-8) print each version]. A counterbalance for fatigue effects: 8 * 2 = sixteen versions * 8 = 128 persons will be used. There will be eight (8) Excel files, each for one version: columns are participants, rows are pairs of terms.

Statistical Analyses

Making use of the SPSS program (Statistical Package for the Social Sciences software program) (SPSS, 2003), the first step in the analysis will include calculating the reliability coefficients of the different participants who completed the eight (8) different versions of the similarity questionnaires for the white Afrikaans-speaking working adult group. Eighty emotion words, those with the highest prototypicality ratings as well as the 24 Meaning Grid

instrument terms (regardless of their protoypicality ratings), will be retained. Based only on individuals who will have an item total correlation above 0,30, the average similarity rating for each pair of emotion terms will be computed. The second step will include a Classical Multidimensional Scaling (CMDS) procedure which typically results in systematic ordering of emotion words around specific dimensions.

Multidimensional Scaling allows for the representation of emotion words as points in a space, with the distance between two points representing dissimilarly in sorting (Borg & Groenen, 2005; Davison, 1983; Kruskal & Wish, 1978). These analyses will be carried out with PROXSCAL of SPSS. By means of an iterative procedure, PROXSCAL computes the coordinates in such a way that there are minimal deviations between the (optimally transformed) dissimilarities (= the ordinal information in the data) and the distances in the geometrical representation (= distances generated by the MDS). PROSCAL minimises the normalised raw stress which is computed as the proportion of squared distances that are not accounted for by the observed dissimilarities. This misfit or stress measure ranges from 0 to 1, with 0 meaning that all observed dissimilarities are accounted for by the distances in the geometrical representation and 1 meaning that the observed dissimilarities are not accounted for at all by the distances in the geometrical representation. The lower the normalised raw stress, the better.

Research Article 3: The meaning of emotion according to the Componential Emotion Theory among white Afrikaans-speaking working adults in South Africa. Approach: A Meaning Grid Approach

Participants

Only white Afrikaans-speaking working adults will participate in this study (N-=120). The minimum educational level for inclusion in participation will be Grade 12. Participants will be from white first-language Afrikaans-speakers in the Eastern Cape, Free State and Gauteng provinces. In terms of gender, men and women will be included. The age of the participants will be from the age of eighteen and older. The participants will participate on a voluntary basis.

Measurement instrument

The Meaning Grid instrument will consist of a paper and pencil questionnaire of 24 emotion terms and 144 emotion features and will be translated into Afrikaans for this study. The 24 emotion terms (*being hurt, sadness, shame, guilt, compassion, disappointment, love, contentment, happiness, pride, pleasure, joy, interest, surprise, despair, stress, anxiety, fear, jealousy, hate, irritation, anger, disgust* and *contempt*) are prototypical emotion terms frequently used in both emotion research and daily language. This representative set will be chosen on the basis of frequent use in the emotion literature, consistent appearance in cross-cultural free listing and prototypicality-rating tasks, and frequent mention in the self-reports from a large-scale Swiss household study of people's descriptions of an emotional situation they experienced the previous day (Scherer et al., 2004).

The 144 emotion features operationalised will be activities in each of the six emotion components: 31 features refer to appraisals, 18 to bodily experiences, 22 to subjective feelings, 9 to facial expression, 12 to vocal expression, 5 to gestural expression, 40 to action tendencies, 3 to regulation and 3 representing other qualities, such as frequency and social acceptance. They will be derived from a broad range of very diverse emotion theories, such as the appraisal theory of Scherer (2001), the psycho-physiological emotion literature (Stemmler, 2003), the action tendency theory of Frijda (Frijda, Kuipers, & Ter Schure, 1989), the current affect theory of Russell (Yik et al., 1999) and the expression regulation theory of Ekman and Friesen (1969).

Procedure

The procedure of this research will be an adapted Afrikaans version of the Meaning Grid that will be administered in a controlled environment. Each participant will be given four emotions randomly chosen from the set of 24, and asked to rate each one in terms of the 144 emotions features. Using a 9-point scale [ranging from "extremely unlikely" (1) to "extremely likely" (9)], they will be asked to rate the likelihood that each of the 144 emotion features could be inferred when a person from their culture group (Afrikaans-speaking South Africans) uses the emotion term to describe an emotional experience. Each of the 144 emotion features will be presented on a separate sheet, and participants will rate all four emotion terms for that feature before proceeding to the next feature. Ethical clearance for

conducting this research study will be obtained from an ethical approval committee in the research institution.Confidentiality and anonymity will be obtained and ensured.

Statistical Analyses

Making use of the SPSS program (Statistical Package for the Social Sciences software program) (SPSS, 2003), Principal Component Analysis (PCA) will be executed to compute the factor structure as well as alpha Cronbach's values to determine the reliability of the rating of each of the emotion terms. The component loadings of the emotion terms on the determined factors will be further investigated and also presented as scatter plots. PCA is a form of factor analysis. There will be 24 emotion terms to be analysed; the variation in the 144 emotion features will be perfectly represented by a solution with 24 components. In this regard Fontaine et al. (2007) state that the matrix is not positive definite (the rank is only 24, not 144). They furthermore argue that factor analyses (exploratory or confirmatory) that assume underlying factors cannot be used with this data, as these techniques require a positive definite matrix. Furthermore, there are no latent traits in the determination of the emotion dimensions. The argument is posed that it makes sense to see whether a matrix of rank 24 can be further reduced to an even smaller number of components without losing much information. In lexical personality research analyzing a matrix with more variables than observations is not uncommon. In that area of research, as applied to the meaning of emotion in the Afrikaans-speaking group, the study aims will be to replicate the four emotion dimensions.

Research Article 4: Emotion episodes of white Afrikaans-speaking working adults in the workplace

Participants

White Afrikaans-speaking working adults between 18 and 70 years will participate in the study (N=150). This study will be conducted in the Eastern Cape, Free State and North West provinces of South Africa. A wide variety of occupations will be covered in the study and each of the participants will participate on an anonymous basis. In terms of gender, men and women will be included.

Measurement instrument

The episode Meaning Grid was developed as part of an Emotion Research Project at Ghent University in Belgium as part of an initiative of the International Society for Cross-Cultural Research on Affect that falls under the Swiss Affect Sciences Centre (http://www.affective-sciences.org/user/171). After the development of the Meaning Grid (as mentioned as measurement instrument in Study 3) a measurement instrument was needed to measure not only the meaning of emotion terms but to measure emotion episodes across cultures. This was also developed in an effort to ensure that the Meaning Grid (a fundamental perspective on the meaning of emotion) can also move towards an applied approach (measurement of emotion episodes). The measurement instrument consists of two parts where Part 1 is more explorative and use more explorative questions and the other part is more an assessment of the emotion episode against the 144 features of the Meaning Grid.

Part 1:

This part consists of an acceptance to voluntarily participate, as well as biographical information.This part consists of an Emotion Frequency Questionnaire. Participants will rate the feelings and emotions they generally have at work on a scale of 1 (never) to 7 (almost constantly). Examples are “anxiety”, “being hurt” and “love”. This type of questions will be asked and participants can vividly remember the emotion experience that they will report on in the emotion episode questionnaire.

Part 2:

The second part consists of an Episode Grid Questionnaire. Participants will be asked to give a personal description of the situation that caused their last emotional experience and about their emotional reactions. Examples:

- Please describe the emotional episode: *What happened?; Who was involved?; How did the situation begin?; How did it evolve?* and *How did it end?*
- When did the emotional episodes take place (e.g. four hours ago or three days ago)?
- Which emotions or feelings did you have in this situation? Please report the two most important emotions or feelings.
- Did you have other emotions or feelings in this situation? If yes, which one?

- Why did you have these emotions or feelings? What caused these emotions or feelings? Please describe what caused the emotions or feelings.
- Could others recognise your emotions or feelings by your face, your posture, of your voice?
- What was your bodily reaction in this situation? Please describe how your body reacted to the emotional situation.
- What did you want to do in this situation and what did you do?
- What did you want to do in this situation, but could not do or decided not to do?
- Did you try to control or alter your emotions or feelings in this situation?

In this part, participants rate the emotion episode according to the six components and emotion features of the Meaning Grid (action tendencies, appraisal of events, bodily sensations, facial and vocal expression and emotional experiences) (Fontaine et al., 2007).

Procedure

All participants will be asked to complete a questionnaire on the most emotionally intense experience at work. The participants will describe two emotional episodes consecutively.To ensure reliability in the completion of the questionnaires, instructions will be formulated and discussed with each participant.

Statistical analysis

Classification of events into categories

The incident classification system suggested by Bitner, Booms and Tetreault (1990) will be adopted for developing a preliminary classification scheme. The events will be sorted and reclassified until a meaningful set of categories can be derived from the data. Data from the respondents will be sorted into categories by an industrial psychology researcher and will be reviewed by another industrial psychologist. It will then be given to another industrial psychologist with a good track record of qualitative methods to classify into these categories. An intercoder reliability measure suggested by Miles and Huberman (1994), (the reliability number of agreements/total number of agreements plus disagreements), will be used to calculate agreement between the relevant coders.

In order to determine the emotion structure in a work context, the SPSS program (Statistical Package for the Social Sciences software program) (SPSS, 2003), will be used. Principal Component Analysis (PCA) will be executed to compute the factor structure. The PCA is a form of exploratory factor analyses. Fontaine et al. (2007) argues that factor analyses (exploratory or confirmatory) that assume underlying factors cannot be used with this data, as these techniques require a positive definite matrix. Fontaine et al. (2007) proposes that PCA, however, is adequate, as it is a pure reduction technique.

3.4 Ethical considerations

Conducting research is an ethical enterprise. Research ethics provide researchers with a code of moral guidelines on how to conduct research in a morally acceptable way. The following is applicable at all times to retain an ethical climate (Struwig & Stead, 2001): The researcher is honest, respectful and fair towards the participants and does not attempt to mislead or deceive the research participants. The researcher will respect the rights and dignity of others. This includes respecting the privacy, confidentiality and autonomy of the research participants. The researcher will be also mindful of individual differences among people, such as age, ethnicity, religion, language and socio-economic status. The researcher will not knowingly discriminate against people on the basis of such factors. The welfare of others will be of great concern. The researcher will avoid or minimise any harm befalling the research participants because of interaction with them.

4. DIVISION OF CHAPTERS

The chapters will be presented as follows:

Chapter 1: Introduction

Emotion structure, emotion meaning and emotion episodes of Afrikaans-speaking working adults

Chapter 2: Research Article 1

The identification of emotion terms used by white Afrikaans-speaking working adults

Chapter 3: Research Article 2

The cognitive structure of emotion terms of white Afrikaans-speaking working adults

Chapter 4: Research Article 3

The meaning of emotion according to the Componential Emotion Theory among white Afrikaans-speaking working adults in South Africa. Approach: A Meaning Grid Approach

Chapter 5: Research Article 4

Emotion episodes of white Afrikaans-speaking working adults in the workplace

Chapter 6

Conclusions, limitations and recommendations

5. CHAPTER SUMMARY

In this chapter, the problem statement and motivation for the research were discussed. The purpose of the research was formulated, the methodology of the research outlined, and the methods used for the statistical analyses described for each of the four proposed research articles were provided.

This research will make the following contributions to the field of Industrial Psychology and the practice thereof in oganisations:

Firstly, the results of this thesis will provide the typical emotion terms used by white Afrikaans-speaking adults group in South Africa. Therefore, the results of this study will contribute to an understanding of the meaning of emotions among white Afrikaans-speaking working adults. Secondly, it will determine the cognitive emotion structure of white Afrikaans-speaking working adults. Thirdly, it will also provide a structure of emotion in the context of emotion features/components for the white Afrikaans language group. Lastly, the study will investigate whether a meaning structure of emotion can be maintained when tested in a work context and it will also report on the categories of emotion episodes. It will ultimately answer the question whether two dimensional models are sufficient to study

emotion in the workplace within a specific cultural group or if multi-dimensional models are needed to study the broad field of emotions and emotion experiences.

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CHAPTER 2

Research Article 1

THE IDENTIFICATION OF EMOTION TERMS USED BY WHITE AFRIKAANS-SPEAKING WORKING ADULTS

ABSTRACT

Orientation

The universalists' view of the relationship of emotions and lexicon is that the inherent structure of emotion lexicon is in accord with the universality of emotional experience and holds universally in most cultures and languages. However, there can be remarkable differences in the exact meanings and scope of the use of specific emotion terms. All cultures have a small number of emotions or emotion words in common, but every culture has multiple ways of enhancing them, sometimes quite differently. The prototypical approach assumes that exemplars of a concept may vary in the degree to which they share similar or common properties.

Research purpose

The purpose was to identity the emotion terms used in a sample of white Afrikaans-speaking working adults, and secondly to determine the prototypicality of emotion terms in a sample of white Afrikaans-speaking working adults.

Motivation for the study

The emotion research field needs more studies conducted in different cultures, based on languages with different historical roots, so that the issue of universality vs. difference can be evaluated in the light of a more extensive database.

Research design, approach and method

The research was subsequently presented in two independent phases. Firstly, a free listing of emotion terms was compiled, and secondly the emotion terms were prototypically rated by Afrikaans-speaking people in South Africa. Both of these were then used as measuring instruments. A survey was designed to explore the research objectives utilising availability samples in two studies. The participants in the free-listing (N=70) and in the prototypicality (N=70) study consisted of native Afrikaans-speaking employees. The sample consisted of participants from the white ethnic group speaking Afrikaans within the Eastern Cape, Gauteng, Free State, Mpumalanga, North-West and KZN provinces and use was made of an availability sample.

Main findings

The emotion terms with the highest frequency, as identified during the free listing task, were *to be happy (gelukkig wees), be sad (hartseer wees), love (liefde), anger (kwaad)* and *hateful (haatlik).* The emotion terms with the lowest scores, as identified during the free-listing, were uncomfortable *(ongemaklik), painful (seer), be hurt (seergemaak wees), sympathetic (simpatiek)* and *shout/yell (skreeu)*. Correspondingly, the five prototypical terms with the highest scores in Afrikaans were *nice (lekker), fed-up/had enough (gatvol/"genoeg gehad"), loveable, (liefdevol), anger (kwaad)* and *to be scared (om bang te wees).* The five (5) least prototypical terms from the list generated in the free listing task were *unstable (onvas), bashfulness (skugterheid), captivation (geboeidheid), envy (naywer)* and *delight (opgetoënheid).*

Practical/managerial implications

When emotions are investigated in the white Afrikaans language group, researchers should note that the emotion lexicon used by this language group consists of terms that are culture specific, for example *"lekker" (nice)* and *"gatvol" (fed-up/had enough).* There is however also more universal emotion terms in use, for example anger and scared. The use of these terms should be incorporated in the investigation of emotion experiences in this language group.

Contribution/value-adding

The results of this study contributed to a cross-cultural understanding of the emotion concepts within the Afrikaans-speaking language groups in South Africa. Therefore, by identifying the emotion terms of the Afrikaans language culture, it enabled the structure of the psychological conditions to which such emotion terms apply to this specific group to be discovered.

OPSOMMING

Oriëntasie

Die universaliste se siening van die verhouding tussen emosies en woordeskat is dat die inherente struktuur van die emosiewoordeskat in ooreenstemming is met die universaliteit van emosionele belewing en universeel van toepassing is in die meeste kulture en tale. Daar is egter merkbare verskille in die presiese betekenis en gebruiksbestek van spesifieke emosieterme. Alle kulture het 'n klein aantal emosies of emosiewoorde in gemeen, maar elke kultuur het 'n verskeidenheid wyses, wat dikwels heel uiteenlopend kan wees, om dit uit te brei. Die prototipiese benadering aanvaar dat voorbeelde van 'n konsep mag verskil in die mate waartoe dit soortgelyke of gemeenskaplike kenmerke deel.

Navorsingsdoelstelling

Die doel was om die emosieterme wat deur 'n steekproefgroep wit Afrikaanssprekende werkende volwassenes gebruik word, te identifiseer, en tweedens om die prototipiesheid van emosieterme in 'n steekproefgroep wit Afrikaanssprekende werkende volwassenes te bepaal.

Motivering vir die studie

Daar is 'n noodsaak in die navorsingsveld oor emosies vir studies in verskillende kulture en tale met verskillende historiese wortels, sodat die teenstelling tussen universaliteit en verskille geëvalueer kan word in die lig van meer uitgebreide gegewens.

Navorsingsontwerp, -benadering en –metode

Die navorsing is in twee onafhanklike fases aangebied. 'n Lys van emosieterme is eers saamgestel, en tweedens is dié terme prototipies deur Afrikaanssprekende persone in Suid-Afrika beoordeel. Beide fases se resultate is daarna as meetinstrumente gebruik. 'n Opname is ontwerp om die navorsingsdoelstellings te ontgin deur die gebruik van beskikbaarheidsteekproewe in twee studies. Die deelnemers in die lysskepping- (N=70) en die prototipiesheid-studie (N=70) het bestaan uit eerstetaal-Afrikaanssprekende werknemers. Die steekproefgroep het bestaan uit deelnemers uit die wit Afrikaanssprekende bevolking in die Oos-Kaap, Gauteng, Vrystaat, Mpumalanga, Noordwes en KZN, en gebruik is gemaak van 'n beskikbaarheidsteekproef.

Hoofbevindinge

Die emosieterme met die hoogste frekwensie, soos dit gedurende die vrye lysting-fase geëdentifiseer is, was *gelukkig wees*, *hartseer wees*, *liefde*, *kwaad* en *haatlik*. Die emosieterme met die laagste tellings soos dit gedurende die vrye lysting geëdentifiseer is, was *ongemaklik*, *seer*, *seergemaak wees*, *simpatiek* en *skreeu*. Die vyf prototipiese terme met die hoogste tellings in Afrikaans was ooreenstemmend *lekker*, *gatvol/"genoeg gehad"*, *liefdevol*, *kwaad* en *om bang te wees*. Die vyf mins prototipiese terme van die lys wat tydens die vrye lysting-fase saamgestel is, was *onvas*, *skugterheid*, *geboeidheid*, *naywer* en *opgetoënheid*.

Praktiese en bestuursimplikasies

Wanneer emosies in die wit Afrikaanssprekende bevolking ondersoek word, moet navorsers daarop let dat die emosiewoordeskat wat in hierdie taalgroep gebruik word, bestaan uit terme wat kultuurspesifiek is, bv. *lekker* en *gatvol*. Daar is egter ook meer universele emosieterme in gebruik, soos *kwaad* en *om bang te* wees. Die gebruik van hierdie terme moet ingesluit word by die ondersoek na emosiebelewenisse in hierdie taalgroep.

Bydrae/Waardetoevoeging

Die bevindinge van die studie het bygedra tot 'n interkulturele begrip van emosieterme in die Afrikaanssprekende taalgroepe in Suid-Afrika. Deur die identifikasie van die emosieterme van die Afrikaanssprekende kultuur het dit die blootlegging van die struktuur van die psigologiese toestande waarop sodanige emosieterme by hierdie groep van toepassing is, moontlik gemaak.

INTRODUCTION

Key focus of this study

In their daily lives, people function more efficiently and more effectively if they are able to structure their thoughts, words and emotions into conceptual frameworks (Rosch, 1978). Emotion terms are often used in daily oral communication and in psychological assessment instruments to report on psychological experiences (Ekman, Friesen, & Ancoli, 1980; Gross & Levenson, 1993). Many researchers (Ekman, 1999; Frijda, 2007; Scherer, 2005) have sought a common definition of what exactly constitutes an emotion, but even after 100 years of research there is still no common definition. Kleinginna & Kleinginna indicated as far back as 1981 that a discrepancy exists in the definitions of emotions. They maintained there are still different definitions for emotion terms (Kleinginna & Kleinginna, 1981a, 1981b). Definitions on emotions have also become increasingly complex, and have been extended to include behavioural (Butler, Chapman, Forman, & Beck, 2006), physiological (Maslow, 1999), and mental events (Feldman Barrett & Fossum, 2001) as components within a single definition.

Researchers have adopted numerous approaches in trying to define emotions, with varying degrees of success (Ekman & Davidson, 1994; Rosch, 1975). Attempts to define emotion can be traced back at least as far as Plato and Aristotle (Leighton, 1982). Chief among these are the definitive classical approach (Markman, 1989) and the natural (prototype) approach, which allows for fuzzy boundaries (where people rely more on their experience on what they feel best represents a category within their specific culture) (Rosch, 1973). According to the classical approach, a concept is defined by a set of rigidly necessary and sufficiently prescriptive conditions (Armstrong, Gleitman, & Gleitman, 1983).

The prototypical approach, on the other hand, assumes that exemplars of a concept may vary in the degree to which they share similar or common properties (Berger & Luckmann, 1966; Blumer, 1969; Garfinkel, 1967; Goffman, 1959). It has become clear, however, that emotions cannot always be defined in classical categories, because there are too many variations in the way people subjectively experience emotions in terms of intensity, perception and even physiology (Armstrong et al., 1983). The problem is that with emotions one has clear-cut

examples, e.g. *anger*, and fuzzier examples, e.g. *indignation*, which is organised around prototypes (Rosch, 1975).

Background to this study

In researching emotion terms, it is therefore better to use a prototype approach. Prototypical surveys allow participants to rate their responses to emotion terms during interviews, which allows for more personal and more varied responses (Demir, Desmet & Hekkert, 2009). Ekman and Scherer agree that anger, fear, sadness, and love are descriptors of emotions terms (Ekman, 1999; Scherer, 2005). However, they question whether alienation, courage or loneliness are emotions. Fehr & Russell (1984) question whether emotions are mental, physiological or behavioural events and experiences. Frijda (1986) argued that emotion is a type of physiological activity. It is clear that the identifying of emotion terms already started long before the eighties (Kleinginna & Kleinginna, 1981a, 1981b), when asking the question whether some emotions are more basic than others and if so, which ones.

The research literature in this study will provide an overview of published literature on the classical approach employed by psychological researchers, followed by the shortcomings of the classical approach. In order to explain the difference between the classical and prototypicality approach, metaphors will be utilised to explain differences between the two in accordance with the explanation of various researchers. Secondly, the prototipicality approach will be discussed. Lastly, examples of prototipicality studies will be presented and the Afrikaans-speaking language group will be introduced as the sample group in this research study.

Trends from the research literature

The classical approach to investigate emotion lexicon

According to Schachter and Singer (1962) and Harre (1987) people's experience of an emotion can depend on how they perceive themselves in terms of emotion words and, more importantly, how they define emotion terms such as anger, love or happiness. Classical definitions are often used as if everyone understands immediately what they mean when they use or hear emotion terms. With this in mind the problem arises that different psychologists, writers and researchers may mean different things or may put classical definitions to different

uses (Markman, 1989; Rosch, 1975, 1978; Rosch & Mervis, 1975; Smith & Medin, 1981). Rosch (1975, 1978), Rosch and Mervis (1975) and also Smith and Medin (1981) define the classical approach by using the description of a square. To use a metaphor, a square is defined by four criteria. Firstly it is a closed figure, secondly it has four sides, thirdly the four sides are of equal length, and lastly all angles are equal. Together these properties form a set of necessary and sufficient criteria that define a square. All squares have these properties, and any object having these properties is a square. Therefore, all squares are equal in their "squareness" and all squares represent the concept of square equally.

Work conducted years later by Markman (1989, p.5) similarly defines the classical approach in these words: “Classical definitions require that categories have an intension and extension that determine one another. The intension of a category is the set of attributes or features that define the category. It is sometimes viewed as the meaning of a category term. The extension of a category is the set of objectives that are members of the category, that is, the set of objects that fulfill the criteria set forth in the intentional definition”. The classical approaches defined above, being either a square analogy or an intension and extension concept, are both classically defined and are useful measurements in the psychology of emotion. Russell in 1995 disagreed and questioned whether emotions like anger, fear, love and similar concepts could be defined by the classical concept. When one looks at these two approaches closely, it is evident that the classical approach is set in stone, with very clear descriptions and sets of boundaries with no leeway for deviation.

Shortcomings of the classical approach

Russell (1995) and Wittgenstein (1953) pointed out the two serious shortcomings of the classical approach. Firstly, reliable lists of defining features are hard to construct for most concepts. Secondly, most categories seem to have an essential imprecision about their boundaries that is not in agreement with the classical view. The classical view fails to account for the “typicality” structure of concepts. A number of objects are “better instances” of concepts than others. They are recalled faster and with less error than atypical instances. For these reasons, the classical view has been generally rejected in psychology (Armstrong et al., 1983; Russell, 1995; Wittgenstein, 1953).

The classical approach has also received other criticism (Rosch, 1975, 1978; Rosch & Mervis, 1975; Smith & Medin, 1981; Wittgenstein, 1958). Specifically, many concepts do not appear to have equally representative members. To use a metaphor again, both a robin and a penguin are "birds," but a robin is more representative of the concept than is a penguin. For example, basketball, chess and tennis are all categorised with the concept "game." In reflecting on the meaning of this concept, in the context of the three examples, one can identify a complicated network of similarities.

Chess and tennis, for example, are both individual games whereas basketball involves teams. Tennis and basketball require athletic skill and involve balls whereas chess is sedentary with no ball. Tennis and basketball are played on a court whereas chess is played on a board. The time of a chess and tennis match is variable whereas the time of a basketball game is preset. All three games use coaches, but only in basketball can the coach yell at the referee during the action of the game. All three games entail winning and losing, but only in tennis can a participant lose many games and still win the match. As other games and sports are added to the analysis, for example bridge, cross-country skiing and skydiving, the possible similarities within any given group (family resemblances) becomes even more difficult. Wittgenstein (1958) refers to this set of connections of similarities as "family resemblances".

It is therefore understandable that the classical approach is not suited to the description of emotion terms and that the prototypical approach, which allows for fuzzy boundaries where one rely more on one’s experience with what one feels best represents a category within a specific culture (Rosch 1973), is more suited.

The prototypical approach to investigate emotion lexicon

More than hundred years after James's (1834) question "What is emotion?” researchers of emotions still search for an answer to this question. In the last century, however, several researchers used prototype theory (Rosch, 1975; Fehr & Russell, 1984) to address this question empirically. Prototype theory at least allows to identify a set of typical emotions, namely love, hate, joy, anger, fear, and sadness.

Therefore, to answer one's question on what the prototypical approach is, studies conducted in the US and Indonesia to examine the representation of emotions and techniques developed by Shaver and colleagues (e.g., Shaver, Murdaya, & Frailey, 2001; Shaver, Schwartz, Kirson, & O'Connor, 1987; Shaver, Wu, & Schwartz, 1992; based on work by Fehr & Russell, 1984) will suffice. The theory behind these techniques, called the prototype approach to categorisation, was first proposed by Rosch (1978) in her writings about ''fuzzy categories'' in everyday language and cognition categories for which there are no clear ''classical'' definitions based on necessary and sufficient features. A prototype is a cognitive concept that provides a way of organising data, in the minds of individuals or groups of people, into the best example of a concept (Rosch, 1973). One advantage of investigative constructs as prototypes is that prototypes reflect how people think and talk about a construct and therefore which are mental representations of categories of objects, events and concepts like emotion (Rosch, 1973).

Rosch (1978) indicated that prototypes are reflective of judgments about membership in a particular category; the best examples of a construct provide a means of conceptualising it without defining it per se. For example, apples as better examples of the concept of fruit than figs (Rosch, 1973). The content of the prototype of fruit are examples of fruit: apples, figs and pears. These examples do not define fruit, but the ones that were rated as better examples of fruit than the others could be considered to represent the best exemplars of the construct. Therefore prototype refers to the best examples of a concept, and all examples can be examined for how well they match the prototype. Rosch (1975) demonstrated that people often use closeness to prototypes to define concepts over feature similarity. In particular, emotion prototypes include a number of features that make up specific emotion scripts, for example antecedents, physiological symptoms, action tendencies, behavioural responses and control strategies (Fehr & Russell, 1984; Shaver et al., 1987). Thus, emotion prototype analysis yields a rich store of information and hypotheses about the way in which emotions are perceived, labelled, and experienced. The conclusion can be made that the prototype approach can be used to understand the everyday use of natural language concepts.

Based on the concept of Wittgenstein's family resemblance idea (Wittgenstein, 1953), the prototypical approach was formulated to verify the deviance from the classical approach to

emotion terms. When compared with the classical view, the prototypical approach assumes that examples of a concept vary in the degree to which they share common properties. This means that the referent and the referee can both have varying degrees of comprehension and interpretation of the same concept. For example, the Wittgenstein's family resemblance idea postulates that most birds have feathers, beaks, wings and can fly. Birds, as known, have all these features and are representative of the concept "bird" (Wittgenstein, 1953). Although penguins, ostriches and kiwis are birds with feathers, beaks, and wings, they are flightless birds whose wings have evolved for other usage. The ostrich, for example, uses its wings for balance, and penguins ‘fly’ through the water using their wings as flippers. They are of the bird family, using their wings for other activities, hence the distinction between flying birds and ground-loving birds both being of the same family. Penguins are still considered birds, even though a set of necessary and jointly sufficient criteria of "birdness" cannot be identified. Thus, the conclusion of the family resemblance idea is that it is not always possible to determine criteria which are essential and sufficient to determine clear membership of a category. Instead, fuzzy boundaries exist and a generic family resemblance idea of category membership is assumed (Berger & Luckmann, 1966; Blumer, 1969; Garfinkel, 1967; Goffman, 1959; Schutz, 1967).

Such concepts are organised into prototypes, according to their clearest examples. Examples vary in their degree of family resemblance to the prototypes, with prototypes shading gradually into non-prototypes and visa versa. More prototypical members (e.g. Lourie, Hoopoe and Cuckoo) share more attributes in common with each other, less prototypical members (e.g. Eagle, Plover and Swan) have less attributes in common and have a greater number of attributes in common with members of nearby concepts (Berger & Luckmann, 1966; Blumer, 1969; Garfinkel, 1967; Goffman, 1959; Schutz, 1967). Therefore, human beings desire purposes and concepts, and therefore need to implement and interpret concepts within the context of their reference.

When understanding emotion terms, the prototypical approach (natural category with fuzzy boundaries) is more effective than the classical approach that categorises terms into solid, unbending and non-negotiable definitions as per the example of a square having four sides of equal length, etc.

What is a natural category with fuzzy boundaries?

Eleanor Rosch has been mainly responsible for the rebirth in the nature of concepts through her expression of prototype theory as an alternative to the classical view (Rosch, 1975, 1978). Prototype theories of concepts were proposed as an alternative to "classical" views in the 1970s (Rosch, 1975, 1978; Rosch & Mervis, 1975). The term prototype was initially defined in Rosch's study, namely "Natural Categories" in 1973. It was defined as a stimulus which takes a prominent position in the structure of a category. Rosch (1973) redefined it as the most central part of a category. Rosch argued that many everyday concepts such as fruit, vehicle and bird lack defining attributes. Such concepts are organised around their clearest examples, which are referred to as prototypes (Rosch, 1973, 1975, 1978). Other examples differ in their degree of family resemblance to the prototypes, with prototypes shading gradually into non-prototypes and non-prototypes shading gradually into non-members.

The more prototypical a member, the more attributes it will have in common with other members, while less prototypical members will have fewer attributes in common with each other and have a greater number of attributes in common with members of nearby concepts. For example, some fruit, such as apple and oranges, are clear prototypical instances of the concept fruit. Other fruits can be ordered from better to poorer examples. There is an internal structure to the concept of fruit. For example: better examples of fruit are grapes and cherries while poorer examples of fruit are tomatoes and coconuts. One concept, such as fruit, blends indistinguishably into neighbouring concepts, such as vegetables and other plants that are safe to eat (Rosch, 1973, 1975, 1978).

Because of the subjective way they are experienced and shared, emotions fall into a natural category with fuzzy boundaries. The metaphor of a fuzzy boundary means that there are no clear boundaries between members and non-members of a category (Rosch, 1973, 1975). Membership of a category is a matter of the degree to which exemplars at the extreme points on a continuum are either clearly members or non-members of a category. In the middle are those exemplars that are difficult to classify. The notion of categories as being fuzzy is consistent with the idea that natural categories have an internal structure based on typicality, or the degree to which exemplars are members of that category (McCloskey & Glucksberg, 1978). Russell (1980) suggested that the term emotion and specific emotion terms such as

anger, fear and sadness designate fuzzy sets, indicating that the emotion domain might fruitfully be analysed from a prototype perspective. As with many of the terms one use in psychology, "emotion" was lifted from everyday discourse. For this reason, it has fuzzy boundaries rather than classical edges (Lazarus, 1991).

Of all the alternative theoretical approaches to knowledge, Rosch's (1978) prototype approach is the most favourable approach for research purposes, because it addresses both the contents of individual categories (i.e. the category of sadness episodes) and the hierarchical relations among categories (i.e. loneliness is a type of sadness, which itself is a type of negative emotion). Rosch proposed that natural category systems can be viewed as having both vertical and horizontal dimensionality (Rosch, 1978). Children, for example, can experience pressure vertically (parents, teachers, policemen) as well as horizontally, (friends, siblings, team mate). Therefore, Rosch's (1977) proposal of an alternative to the classical view led to healthy competition among non-classical accounts (Kahneman & Miller, 1986; Lakoff, 1987; Neisser, 1987; Smith & Medin, 1981).

According to Fehr and Russell (1984), and Shaver et al., (1987) this prototype approach is necessary to identify the emotions which are a true representation of typical emotion terms specifically used by a culture group. Therefore, the prototype approach to emotion knowledge promises to add in numerous ways to the understanding of emotion representation in everyday life. Fehr and Russell (1984) believe that a prototype approach provides useful ways to investigate emotions, and also correlate with emotion knowledge. Russel (1995) therefore argues for the use of the prototype approach.

Therefore, in order to identity the emotion terms and understand the emotion concepts and lexicon within a specific culture group, it is essential to identify emotion terms that represent the emotions actually experienced by the group concerned. For the selection of such terms, the prototype approach has been used successfully in previous research (Fehr & Russell, 1984; Shaver et al., 1987) as presented in the following research studies:

Free listing and prototypicality studies:

Using a prototype approach to emotion concepts, two studies were conducted in 2006 in the Basque Country cituated on the border between France and Spain on the Atlantic coast. The first study was to identify the mental state words that Basque speakers are most certain name emotions, and the second study was to map the hierarchical and family resemblance structure of the most prototypical 124 emotion concepts. The words with the 12 highest prototypicality ratings were *poza (joy, delight, happiness), amorrua (rage, anger, wrath), beldurra (fear, dread, fright), alaitasuna (happiness, joy), zoriontasuna (happiness), ikara (scare, fright, terror), errabia (rage, fury, wrath), pena (sorrow), pasioa (passion), gorrotoa (hate), izua (fear, terror, fright),* and *maitasuna (love).* Each of these words is closely related to one of the five basic-level categories obtained in the American and Indonesian studies: *love, happiness, anger, sadness* and *fear*. The reason for choosing the number 12 is that this is the number of emotion words analysed by Frijda and colleagues (Frijda, Markam, Sato, & Wiers, 1995; van Goozen & Fridja, 1993) in studies of six European countries (Belgium, France, Switzerland, Italy, the Netherlands, England, and Turkey), three Asian countries (Japan, Suriname, and Indonesia), and Canada, allowing us to compare their results. The results suggest that the emotion lexicons and corresponding conceptualisations of the emotion domain in the Basque Country, Indonesia, and the US are similar, although there are some important differences (Alonso-Arbiol et al., 2006).

In 2004, a successful study was conducted in Chicago. Participants in the monolingual English-speaking groups were recruited from urban Chicago: younger individuals in their 20s from college campuses and older individuals over 60 years of age from area senior centers and newspaper advertisements. Participants engaged in a paper-and-pencil free-listing task in which they were asked to list as many emotion words as they could think of in a two-minute period. After making the list, participants were asked to evaluate the valence of each emotion that they listed by indicating whether the emotion was unpleasant (1), neutral (2) or pleasant (3). The 'working emotion vocabulary' typically shows a preponderance of words for negative emotions (50%) over positive (30%) and neutral (20%) emotions. This task was part of a larger free-listing project in which individuals made lists for six domains (animals, illnesses, emotions, men's work, women's work and ways to lose money). There were no

significant differences in list-length. Equivalent length of lists across these four groups suggests similar knowledge levels of the domain of emotions. The first 12 entries for both Anglo-English and Mexican Spanish for young Anglos were *happy, sad, angry, excited, afraid, love, depressed, anxious, confused, frustrated, ecstatic* and *exhausted*. The emotion terms from the old Anglos were *sad, happy, angry, love, hate, hurt, funny, afraid, depressed, exhausted excited* and *anxious*. The dependent measure in this case is numbers of positive, neutral and negative terms. In sum, negatively valence terms outnumbered neutral and positive terms, and younger people did not differ from older people in this regard. The older individuals will have more diverse emotion lexicons than younger individuals (Schrauf & Sanchez, 2004).

In 2002 a study was conducted with 100 subjects (age in the range from 14 to 88) involved, 50 men and 50 women. All of them were native Estonian speakers; most were inhabitants of Tallinn or its suburbs (Vainik 2002). The object of the study was to explore the layperson's model of emotions as it presents itself in the Estonian emotion vocabulary. In order to find out what words the Estonians consider as belonging to the category of emotions, an empirical study was carried out (Vainik, 2002). Several more specific goals were stated for the study: to collect the vocabulary of emotions being "actively used" by real native Estonian speakers, and to examine the basic emotion terms and concepts in Estonian, taking into account their frequency and mean position of being mentioned by the subjects. As the instruction encouraged people to mention everything that came to mind in association with the label "emotions/feelings" in addition to proper emotion terms, words designating several emotion-associated phenomena (behavioural expressions, sensations, personality traits, activation level, etc.) were also elicited. These expressions were counted as meaningful for the Estonian layperson's model of emotion in the case of a frequency rating. The resulting data are examined from both psychological and linguistic points of view. A hundred subjects named 844 words, so the average length of an individual list was 8.44 items. During the task 390 different word forms were mentioned, 58 of which were named by three individuals. The 13 most outstanding emotion terms had values equal or above the average, while 45 emotion terms scored less than the average The four most frequent emotion terms noted by the participants were *viha (anger)* (95% of the participants noted this emotion term), *armastus (love)* (72%), *rõõm (joy)* (93%) and *kurbus (sadness)*(86%) (Vainik, 2002).

Shaver et al., (1987) proposed a structure based on prototype theory to describe the hierarchical cluster analysis of sorting of 135 emotion terms drawn from the emotion lexicon. Shaver et al. reported a solution consisting of six "fuzzy" categories, each containing both general and specific terms belonging to a single emotion family, and each characterised by a single basic level term: *love, joy, surprise, anger, sadness* and *fear.*

In 1984, Fehr and Russell at the University of British Columbia in Vancouver in Canada conducted a series of free listing and prototypicality studies. In these studies, subjects were all undergraduates who were asked to list as many items under the category “emotions” as came readily to mind. A total of 383 different items were mentioned. At one extreme were the 187 listed by only one individual and at the other extreme were four categories, (happiness, anger, sadness and love), listed by more than half of the subjects. Twenty (20) emotion terms *(love, sadness, hate, happiness, joy, anger, depression, envy, disgust, fear, guilt, pride, worry, anxiety, excitement, respect, awe, embarrassment, boredom* and *calmness)* were selected out of this study for further analysis.

In another study the subjects were give the opportunity to verify that the 20 emotions listed above can indeed be considered emotions. For each of the items, the subjects’ tasks were to provide a general category to which the emotion could be allocated. The top seven general categories to emerge were *love, sadness, hate, happiness, joy, anger* and *depression*. It is interesting to note that four of these categories can be regarded as “negative”, *(sadness, hate, anger* and *depression),* while a minority of only three (*love, happiness* and *joy*) constitute what may be regarded as “positive” emotions (Fehr & Russell, 1984). In a follow-up study (prototypicality rating), the subjects directly rated how good an example of emotion each of the 20 target emotions is. *Love, hate, anger, sadness, happiness, joy* and *fear* were regarded as extremely good example of emotions, while *worry, disgust, awe, pride, calmness, boredom* and *respect* were regarded as extremely poor examples of emotions (Fehr & Russell, 1984).

In 1984, a substitutability questionnaire sought to establish the sorts of things the students had in mind when they heard and used specific emotion words. In this study, Fehr and Russell were interested in how peculiar or how natural certain sentences sound. It was

observed that the substitution of the more prototypical exemplars in sentences tended to produce sentences which sounded more natural to the participants (Fehr & Russell, 1984).

In a series of studies the feasibility of the prototype approach to emotion concepts was explored empirically (Fehr & Russell, 1984; Fehr, Russell & Ward, 1982; Russell & Bullock, 1986). The results of this study demonstrated that converging sources of evidence showed that the concept of emotion has an internal structure and that the internal structure predicts various indices of cognitive processing involving emotion concepts.

Although a number of prototypicality research studies are reported in different cultural groups, there is a lack of knowledge on emotion lexicon in the white Afrikaans-speaking language group - the third most used language group in South Africa. According to the Community Survey 2007, South Africa is a nation of 48 502 063 citizens situated in the most southern part of Africa, between the Atlantic and Indian Ocean (Jeppie, 2007). South Africa has 11 official languages (Afrikaans, English, isiNdebele, isiXhosa, isiZulu, Sesotho sa Leboa, Sesotho, Setswana, siSwati, Tshivenda and Xitsonga). According to South African people, their ethnicities are grouped into White, Coloured, African and Indian, and Afrikaans is mostly spoken within the White and Coloured groups.

The boundaries of the natural category “emotions” itself are not yet clear in Afrikaans as this category seems to be mixed and blended with another closely related natural category “emotion terms”. With specific reference to the white Afrikaans-speaking cultural group, no earlier studies have been conducted to determine emotion terms according to a prototypicality rating instrument and to identify the emotion terms in Afrikaans. The focus of this research is therefore to identify the emotion terms that are commonly used in the Afrikaans language. Since Afrikaans is a relatively young and unknown cultural group (Brown, 2007) and there is therefore little or no data about the Afrikaans emotion terms available, this research will contribute considerably to the understanding of these emotion terms. In order to use a homogeneous sample, the focus of the study will be on the white Afrikaans-speaking language group. [Although this is a linguistic study, working adults will be used seeing that the ultimate goal of this thesis will be the investigation of the meaning of emotion in a work context in research article 4 (as mentioned in the introductory chapter)].

The selection of emotion terms for the white Afrikaans-speaking working adults involved in this study was based on the rating of the prototypicality of emotion terms within that specific group. Therefore, by identifying the emotion terms which are commonly used by Afrikaners, the results of this study contributed to a cross-cultural understanding of white Afrikaans-speaking working adults' emotion terms compared to other international studies and it identified the cognitive emotion structure within a specific culture group. This leads to the formulation of the following research aims:

Research aim:

1. To identify the emotion terms used in a white Afrikaans-speaking working adult group; and
2. To determine the most and least prototypical emotion terms in a white Afrikaans-speaking working adult group.

The potential value-adding of this study

The potential value-adding of this study to the field of Industrial Psychology will be to identify the emotion terms which are commonly used by Afrikaners. Therefore, the results of this study will contribute to a cross-cultural understanding of white Afrikaans-speaking working adults' emotion terms compared to other international studies within a specific culture group.

In order to understand the above, the research study will flow into the following division: Firstly, the *method* explains the research design, the procedure, the participants of the free listing and prototypicality rating task study, the measurement instrument that was used and the statistical analyses. Secondly, the *results* of the emotion terms will be reported (reported five times or more) as well as a mean prototypicality rating task of emotion terms. Thirdly, a *discussion* will conclude this research article.

What will follow?

In the remainder of this research article the method of the research with reference to the two interrelated studies will be presented by referring to the participants, procedure, measurement instruments and statistical analysis.

METHOD

The research was conducted in two independent phases, namely the free listing followed by the prototypicality rating of the emotion terms for the white Afrikaans-speaking working adults in South Africa. The main source in each cultural group was a free listing task (Fontaine, Poortinga, Setiadi, & Suprapti, 1996).

Research Approach

Study 1: Free listing

Free listing of emotion words

The free listing questionnaire was presented to white Afrikaans-speaking working adults and they were requested to list as many Afrikaans emotion terms as came spontaneously to mind within ten (10) minutes. According to Bretherton and Beeghly (1982), Ekman (1984), Epstein (1984), and Izard (1977) the results for the free listing task indicated that for more than 300 participants, basic emotions of happiness, anger, sadness, love, fear and hate were emotions which most readily come to mind. This list of basic-level emotions corresponds roughly to emotion theorists' lists of basic or primary emotions. The free listing task provided many emotion terms which was further scaled down by using the prototype approach.

Study 2: Prototypicality rating task

Prototypicality rating task of emotion terms

There is confusion between the frequency with which emotion terms are used in daily language on the one hand and the adequacy for the concept of emotion in general use on the other hand. Therefore a broader list of terms is being compiled rated on the concept of emotion. This is just another way to identify the emotion lexicon. It is necessary to determine the extent to which these terms are representative of the emotion domain of the white Afrikaans-speaking working adult group in South Africa.

Study 1:

Participants

The study population of the first phase (free listing of emotion terms) consisted of a convenience sample of white Afrikaans-speaking working adults from the Eastern Cape, Gauteng, Free State, Mpumalanga, North-West, KZN and the Western Cape provinces in South Africa (N=70). The participants' first language is Afrikaans and they participated on a voluntary basis. Table 1 illustrates some of the characteristics of the participants of the free listing exercise.

Table 1

Characteristics of the Afrikaans-speaking Participants of the Free Listing Exercise (N=70)

Item	Category	Frequency	Percentage (%)
Language	Afrikaans	70	100
Gender	Male	25	35,7
	Female	45	64,3
Age	18-27	7	10
	28+	63	90
Province	Eastern Cape	39	56
	Gauteng	21	30
	Free State	3	4,3
	Mpumalanga	1	1,4
	North-West	2	2,9
	Western Cape	1	1,4
	KZN	3	4,3
Education level	Grade 12	33	47,1
	Certificate / Short Diploma	9	13
	3-year Diploma / Degree	15	21,4
	Post-graduate	12	17,1
	Other	1	1,4

The study population consisted of a convenience sample of white Afrikaans-speaking working adults (*N*=70) in the greater South African provinces. In terms of gender, women outnumbered men by two to one. The majority (90%) were 28 years of age and older. The

Eastern Cape participants made up more than 50% of the total. Nearly half (47,1%) of the participants had a Grade 12 qualification, while 21.4% were graduates and diplomats. Only 17,1% of the participants had post-graduate qualifications and only one participant had another level of education.

Study 2:

Participants

The study population in the second phase (prototypicality rating task of the Extended English Emotion List) comprised a convenience sample of Language Experts in the Afrikaans language from different occupations (*N*=70). The participants were from the Eastern Cape, Free State and the North-West provinces. The participants' first language is Afrikaans. Table 2 presents some of the characteristics of the participants. The participants participated on a voluntary basis.

Table 2

Characteristics of the participants of the Prototypicality Rating Task Exercise (N=70)

Item	Category	Frequency	Percentage (%)
Language	Afrikaans	70	100
Gender	Male	16	23
	Female	54	77
Age	18 – 27	9	12
	28 – 37	25	36
	38 – 47	13	19
	48+	23	33
Province	Eastern Cape	67	96
	Free State	2	3
	North-West	1	1
Education level	Grade 12	25	36
	Certificate/Short Diploma	2	3
	3-year Diploma/Degree	8	11,4
	Post-graduate	14	20
	Other	21	30

Table 2 included only white Afrikaans-speaking working adults (100%) from the Eastern Cape, Free State and North-West provinces. In terms of gender, the ratio of men to women was one to three (Percentage: men: 23% and women: 77%). The majority (88%) were 28 years and older. Participants from the Eastern Cape province outnumbered participants from the other provinces by more than 96%. Nearly half (36%) of the participants had a Grade 12 qualification, while 11,4% were graduates and diplomats. One third (30%) of the participants had another level of Education.

Study 1:

Measuring instrument: Free Listing Questionnaire

The free listing questionnaire was utilised as in this study. Respondents were asked to list as many emotion terms they can think of in ten (10) minutes. Terms mentioned at least five times during the free listing exercise were accepted and translated into English in order to construct a basic list of English emotion terms (Basic English Emotion List or BEEL). It is necessary to clean the data set by eliminating redundancy. All but one of each set of words formed from the same root (e.g. hate and hatred) are removed. Terms that are clearly not an emotion term (e.g. terms that refer to antecedents like awake or the mere expressive behaviour like tears, crying etc.) are rejected.

Study 2:

Measuring instrument: Prototypicality Rating Task Questionnaire

In order to ensure a comprehensive coverage of the emotion domain, the three lists of emotion terms obtained in study 1 were extended with the terms translated from the emotion list reported by Shaver et al. (1987), the Indonesian and Dutch emotion lists reported by Fontaine, Poortinga, Setiadi, and Markham (2002), as well as the 24 prototypical emotion terms (emotion terms from the Grid instrument) commonly used in both emotion research and daily language as reported by Scherer (2005) to construct an Extended English Emotion List (EEEL). This representative set (24 Meaning Grid terms) was chosen on the basis of (1) frequent use in the emotion literature, (2) consistent appearance in cross-cultural free listing

and prototypicality rating tasks, and (3) self-reported emotion words from a large scale Swiss household study (Scherer, Wranik, Sangsue, Tran, & Scherer, 2004). The finally constructed prototypicality rating task questionnaires were used to rate the emotion terms of the Extended Emotion List on prototypicality for the concept of emotion. Three versions of this questionnaire are used and the emotion terms are listed in randomised order. Scales ranging from 1 (*certainly not an emotion*), 2 (*unlikely to be an emotion*), 3 (*likely to be an emotion*), and 4 (*certainly an emotion*) were used.

Study 1:

Procedure

The free listing questionnaires are compiled. Ethical aspects of the research are discussed with the participants. Respondents are able to respond (list emotion terms) in their mother tongue. Respondents are tested in groups consisting of a maximum of 5 participants. A standardised procedure is followed by a qualified psychologist. Each respondent has his or her own desk, chair as well as the necessary stationery. The auditorium is properly lit and ventilated. The supervised and controlled test session lasts for 15 minutes.

Study 2:

Procedure

Prototypical rating task questionnaires are compiled. Ethical aspects of the research are discussed with the participants. The questionnaire was administered by native-speaking language experts on different occasions based on availability.

Study 1:

Statistical Analysis

Terms mentioned at least 5 times across all the participants were accepted and translated into English. Free listing emotion words that were reported by the respondents were captured in Excel. A macro was developed for the Excel sheet, calculating the frequency of emotion words, number of participants that reported each emotion term, ranking of emotion terms per

respondent and average number of emotion terms reported, as well as the median per emotion term. The data is cleaned by eliminating redundancy, meaning that all but one set of words formed from the same root (e.g. hate and hatred) are removed.

Study 2:

Statistical Analysis

The mean average score on each emotion term was calculated in Excel. This was sorted from the highest to the lowest mean average score so that the most prototypical emotion terms was indicated at the top of the list and the lowest prototypical emotion terms at the bottom of the list. Making use of the SPSS program (Statistical Package for the Social Sciences software program) (SPSS, 2003), inter-rater reliability values will be computed for each of the emotion terms. The participants (raters) with a score of less than 0,20 on the combined score were removed and meaning that the remaining raters had a distinctive understanding of the emotion terms.

RESULTS

Study 1: Free listing

Table 3 reports the emotion terms that were reported five times or more by the respondents from the white Afrikaans-speaking working adult group in South Africa. The emotion terms which most readily came to mind as examples of emotion by the white Afrikaans-speaking participants were emotions of joy, emotions of sorrow and emotions of love.

Table 3

Emotion Terms (reported five times or more)

Original Afrikaans Emotion Response	English translations	Frequency of Participants that Reported the Emotion
gelukkig wees	to be happy	76
hartseer wees (tranerig)	be sad (tearful)	64
liefde	Love	58
kwaad	Angry	57
haatlik	Hateful	54

opgewondenheid	Excitement	54
blydskap	Happiness	51
beangs	Anxious	46
ongelukkig	Unhappy	45
bang	Scared	36
jaloesie	Jealousy	34
woedend	Furious	34
teleurstelling	Disappointment	27
vreesbevange	Terrified	27
huilerig wees	to be tearful	26
depressief wees	to be depressed	21
tevredenheid	Satisfaction	20
skaamte	Shyness	19
verlief wees	to be in love	19
terneergedruk/neerslagtig	Depressed	18
moeg	Tired	17
geïrriteerd	Irritated	15
alleen	lonely/alone	14
eensaamheid	Loneliness	14
gefrustreerd	Frustrated	13
lekker	Nice	13
verlange	Longing	13
geduldig	Patient	12
kalmeer	calm down	11
rustig	Calm	11
trots	Proud	11
vreugde	Joy	11
liefdevol	Loveable	10
ongeduldig	Impatient	10
bekommerd	Worried	9
opgewek	Cheerful	9
bedruk	Depressed	8
geskok/skokkend	shocked/shocking	8
irritasie	Irritation	8
pynlik	Painful	8
frustrerend	Frustrating	7
gespanne	Tense	7
hoopvol	Hopeful	7

onsekerheid	Uncertainty	7
ontsteld	Upset	7
verbaas	Amazed	7
vrede	Peace	7
vriendelik	Friendly	7
aggressie	Aggression	6
empatie vir mense	empathy for others	6
gatvol/"genoeg gehad"	fed up/had enough	6
moedeloos	Dishearted	6
plesierigheid	Pleasantness	6
senuweeagtig	Nervousness	6
bakleierig wees	be quarrelsome	5
belangstelling	Interest	5
emosioneel stabiel	emotionally stable	5
nuuskierig	Curious	5
ondersteuning	Support	5
ongemaklik	Uncomfortable	5
seer	Painful	5
seergemaak wees	be hurt	5
simpatiek	Sympathetic	5
skreeu	shout/yell	5

In Table 3 the dominant emotion terms reported five times or more frequently by the participants were of a negative nature with only 23 positive emotion terms being reported. Emotion terms with the highest frequency listed by the participants in the free listing task were: to be happy (gelukkig wees), be sad (tearful) (hartseer wees/tranerig), love (liefde), angry (kwaad), hateful (haatlik) and excitement (opgewondenheid). The six (6) emotion terms that were at the bottom of the list, based on how times they were mentioned, were: support (ondersteuning), uncomfortable (ongemaklik), painful (seer), be hurt (seergemaak wees), sympathetic (simpatiek) and shout/yell (skreeu). These terms, amongst quite a number of others, corresponded with the results of the prototypicality ratings, namely: love (liefde), angry (kwaad) and happiness (blydskap).

Study 2: Prototypicality rating task

Table 4 illustrates the mean prototypical rating task of Afrikaans emotion terms mentioned 5 times and more by the participants. A total of 263 emotion terms were used in the prototypicality questionnaire.

Table 4

Mean Prototypicality Rating Task of Emotion Terms

Afrikaans	**English**	***Mean***
lekker	Nice	3,6
gatvol/"genoeg gehad"	fed up/had enough	3,6
liefdevol	Loveable	3,6
kwaad	Angry	3,5
om bang te wees	to be scared	3,5
trots	Proud	3,5
liefde	Love	3,5
negatief	Negative	3,5
dankbaarheid	Gratefulness	3,4
ongelukkig	Unhappy	3,4
blydskap	Happiness	3,4
geïrriteerd	Irritated	3,4
gelukkig	Happy	3,4
hartseer wees (tranerig)	be sad (tearful)	3,4
verlief	in love	3,4
woede	Anger	3,4
aggressief	Aggressive	3,4
bang	Scared	3,4
geduld	Patience	3,4
stres	Stress	3,4
plesier	Pleasure	3,3
selfvertroue	self-confidence	3,3
geluk	Joy	3,3
gelukkig wees	be happy	3,3
om emosioneel te wees	to be emotional	3,3
ongelukkigheid	Unhappiness	3,3
teleurgesteld wees	Disappointment	3,3
verlange	Longing	3,3

vriendelik	Friendly	3,3
vriendelikheid	Friendliness	3,3
geduldig	Patient	3,3
gespanne	Tense	3,3
moeg	Tired	3,3
pyn	Pain	3,3
verlief wees	to be in love	3,3
bekommer	Worry	3,2
ontsteld	Upset	3,2
seer	Painful	3,2
spanning	Tension	3,2
woedend	Furious	3,2
frustrasie	Frustration	3,2
keelvol	had enough	3,2
ongeduldigheid	Impatience	3,2
positief	Positive	3,2
tuis voel	feel at home	3,2
verbaas	Amazed	3,2
aangenaamheid	Pleasantness	3,2
frustrerend	Frustrating	3,2
moedeloos	Disheartened	3,2
ongeduldig	Impatient	3,2
ontevredenheid	Dissatisfied	3,2
seergemaak wees	be hurt	3,2
vreugde	Joy	3,2
gefrustreerd	Frustrated	3,1
gewilligheid	Willingness	3,1
irritasie	Irritation	3,1
jammerte	Sorrow	3,1
om seker te wees	to be sure	3,1
ondersteuning	Support	3,1
ongemaklik	Uncomfortable	3,1
opgewondenheid	Excitement	3,1
simpatiek	Sympathetic	3,1
verligting	Relief	3,1
vrees	Fear	3,1
bakleierig wees	be quarrelsome	3,1
bekommerd	worried	3,1

depressie	depression	3,1
depressief wees	to be depressive	3,1
eerlikheid	honesty	3,1
geskok/skokkend	shocked/shocking	3,1
jaloesie	jealousy	3,1
onsekerheid	uncertainty	3,1
teleurstelling	disappointment	3,1
vertroue	Trust	3,1
vreesbevange	terrified	3,1
haat	Hate	3,1
plesierigheid	pleasantness	3,1
senuweeagtigheid	nervousness	3,1
skok	Shock	3,1
vriendskap	friendship	3,1
eensaamheid	loneliness	3
moeite doen	take the trouble	3
pynlik	painful	3
simpatie	sympathy	3
treurigheid	sadness	3
belangstelling	interest	3
bevrediging	satisfaction	3
hoop	Hope	3
kalmeer	calm down	3
opgewek	cheerful	3
paniek	Panic	3
rustig	Calm	3
vergenoegdheid/tevredenheid	satisfaction	3
angs	anxiety	3
begeerte	desire	3
lus	craving	3
ly	suffer	3
om bedruk te wees	to be depressed	3
oorwinning	victory	3
opgewektheid	cheerfulness	3
verlore	Lost	3
angstigheid	anxiety	3
onrustigheid	restlessness	3
terneergedruktheid	depression	3

twyfelagtig	doubtful	3
verlore voel	feeling lost	3
ekstase	ecstasy	3
leed/smart/verdriet	pain/sorrow/grief	3
magteloosheid	helplessness	3
sarkasme	sarcasm	3
senuweeagtig	nervous	3
skaamte	shyness	3
skuld	Guilt	3
twyfel	doubt	3
vernedering	humiliation	3
berou	remorse	3
entoesiasme/geesdrif	enthusiasm	3
hopeloosheid	hopelessness	3
mismoedigheid	dissatisfaction	3
nuuskierig	curious	3
ontsteltenis	dismay	3
skrik	Fright	3
smart	Grief	3
teerheid	tenderness	3
verrassend	surprising	3
verspot	silly/foolish	3
bedruk	depressed	2,8
blymoedigheid	joyfulness	2,8
gemis	longing	2,8
hoopvol	hopeful	2,8
huilerig wees	to be tearful	2,8
moegheid	tiredness	2,8
motivering	motivation	2,8
passie	passion	2,8
rusteloosheid	restlessness	2,8
selfverwyt	blaming oneself	2,8
verleentheid	embarrassment	2,8
vrede	Peace	2,8
aanbidding	worship	2,8
agterdog	suspicion	2,8
kalmte	calmness	2,8
moed	courage	2,8

skreeu	shout/yell	2,8
verbasing	surprise	2,8
verdriet	sorrow	2,8
verleë	embarrassed	2,8
vreedsaamheid	peacefulness	2,8
aangetrokkenheid	attraction	2,8
benoudheid	anxiety	2,8
emosioneel stabiel	emotionally stable	2,8
skaamheid	shyness	2,8
vyandigheid	animosity	2,8
joligheid	jolliness	2,7
lyding	suffering	2,7
medelye	compassion	2,7
minagting	contempt	2,7
nukkerigheid	moodiness	2,7
onverskilligheid	carelessness	2,7
optimisme	optimism	2,7
terneergedruk/neerslagtig	depressed	2,7
verveeldheid	boredom	2,7
verwaarloos	neglect	2,7
verward	confused	2,7
alleen	lonely/alone	2,7
bewe	shiver	2,7
bewondering	admiration	2,7
empatie vir mense	empathy for others	2,7
verras	surprised	2,7
verwerping	rejection	2,7
histerie	hysteria	2,6
jammerhartigheid	compassion	2,6
onafhanklikheid	independence	2,6
onderdrukte woede	suppressed anger	2,6
tevredenheid	satisfaction	2,6
verbittering	embitterment	2,6
afwagting	expectation	2,6
beangs	anxious	2,6
uitbundigheid	exuberance	2,6
uitgelatenheid	boisterousness	2,6
vermaak	amused	2,6

verontwaardiging	indignation	2,6
verwarring	confusion	2,6
stilte	silence	2,6
verstomming	speechlessness	2,6
walging	loathing	2,6
beledig	Insult	2,5
berusting	resignation	2,5
buierigheid	moodiness	2,5
gretigheid	eagerness	2,5
haatlik	hateful	2,5
huiwerigheid	hesitation	2,5
sorgsaam	attentive	2,5
verergdheid	annoyance	2,5
wanhopig	desperate	2,5
betowering	enchantment	2,5
bewoë	moved	2,5
hartlikheid	heartiness	2,5
om ekstaties te wees	to be ecstatic	2,5
skrikmaak	frighten	2,5
vervoering	enthusiasm	2,5
wanhoop	despair	2,5
ellende	misery	2,5
geluksaligheid	blissfulness	2,5
gemoedsrus	peace of mind	2,5
gevlei	flattered	2,5
kwaadwilligheid	malice	2,5
swaarmoedigheid	melancholy	2,5
aangedaan	moved	2,4
heimwee	nostalgia	2,4
ondergeskiktheid/minderwaardigheid	subordination/inferiority	2,4
verskrikking	horror	2,4
gehegtheid	fondness	2,4
gejuig	jubilation	2,4
pessimisme	pessimism	2,4
pyniging/foltering	torture	2,4
vervreemding	alienation	2,4
voorkeur	preference	2,4
leegheid	emptiness	2,4

sensasie	sensation	2,4
suinigheid	stinginess	2,4
weersin	dislike	2,3
genieting	enjoyment	2,3
ongesteldheid	ailment/illness	2,3
sentimentaliteit	sentimentality	2,3
sondigheid	sinfulness	2,3
versotheid	fondness	2,3
ywer	diligence	2,3
afkeer	disdain	2,3
afkerigheid	aversion	2,3
gegriefdheid	convenience	2,3
norsheid	grimness	2,3
verdrukking	oppression	2,3
afsku	abomination	2,2
oorval	surprise	2,2
wraakgierigheid	revengefulness	2,2
ergernis	annoyance	2,2
isolasie	isolation	2,2
wellus	Lust	2,2
veragting	contempt	2,1
toorn/raserny	anger/rage	2,1
nostalgie	nostalgia	2,1
onbeholpenheid	clumsiness	2,1
sielsangs	mental agony	2,1
euforie	euphoria	2,0
misnoeë	discontent	2,0
somberheid	somberness	2,0
baasraak	master	2
heftigheid	vehemence	2
oorgee	surrender	2
melankolie/droefgeestigheid	melancholy/pensiveness	2
onderwerping	submission	2
verontrusting	perturbation/anxiety	2
ontsetting	Fright	2
prikkeling	stimulation	2
toorn	Anger	2
toegeneëntheid	devotedness	2

gekrenktheid	mortification	2
leedvermaak	malicious pleasure	2
onvas	unstable	2
skugterheid	bashfulness	2
geboeidheid	captivation	2
naywer	Envy	2
opgetoënheid	delight	2

The emotion terms ranked as the ten (10) most prototypical emotion terms for the white Afrikaans-speaking working adult group were: nice (lekker), fed up/had enough (gatvol/"genoeg gehad"), loveable (liefdevol), angry (kwaad), to be scared (om bang te wees), proud (trots), love (liefde), negative (negatief), gratefulness (dankbaarheid) and unhappy (ongelukkig). The ten (10) least prototypical emotion terms from the list generated in the free listing task were: stimulation (prikkeling), anger (toorn), devotedness (toegeneëntheid), mortification (gekrenktheid), malicious pleasure (leedvermaak), unstable (onvas), bashfulness (skugterheid), captivation (geboeidheid), envy (naywer) and delight (opgetoënheid). These emotion terms (the top most frequently identified terms, as well as the most prototypical emotion terms) corresponds with lists of basic emotion terms found in the literature, which are happiness, anger, sadness, love, fear and hate (Bretherton & Beeghly, 1982; Ekman, 1984; Epstein, 1984; Izard, 1977).

DISCUSSION

The observation is that there are only a small number of basic emotions that are recognised cross-culturally: *happy, sad, angry, afraid, surprised,* and *disgusted*. All other emotions, frequently labelled "complex emotions", are either treated as being blends of the basic six or being culture specific (Ekman & Friesen, 1969; Prinz, 2004). As the Afrikaner is a relatively young and unknown cultural group, there is little or no data about the Afrikaans-speaking emotion terms. Markham (1989) stated that the classical approach has necessary and sufficient criteria, with clear-cut boundaries between neighbouring categories, and all category members have equal status. When one looks at these qualities, it is evident that the classical approach is set in stone, with very clear descriptions and sets of boundaries with no flexibility for difference. When investigating and understanding emotion terms, the

prototypical approach is more effective because emotion terms are define by best exemplars and emotions cannot be set in stone, whereas the classical approach defines emotion terms on common features.

The main objective of this research:

The main objective of this research was firstly to identity the emotion terms used in a sample of Afrikaans-speaking participants, and secondly to determine the most prototypical emotion terms as well the least prototypical emotion terms in a sample of Afrikaans-speaking participants, based on the prototype approach that has been used successfully in previous research (Fehr & Russell, 1984; Shaver et al., 1987).

Research aim one:

To identify the emotion terms used in a white Afrikaans-speaking working adult group.

The results indicated that emotion terms that were listed as the most frequent in the white Afrikaans-speaking language group are *to be happy (gelukkig wees), be sad (tearful) (hartseer wees/tranerig), love (liefde), angry (kwaad)* and *hateful (haatlik).* The five (5) emotion terms that were at the bottom of the list based on how many times they were mentioned, were *uncomfortable (ongemaklik), painful (seer), be hurt (seergemaak wees), sympathetic (simpatiek)* and *shout/yell (skreeu).* During the present study of the free listing exercise emotion terms varied widely in how readily they came to mind. At one extreme were 62 listed by one individual within the 10 minutes time frame. On the other hand, one individual listed only 7 emotion terms. For some of the participants there was an almost instantaneous recognition of the emotion terms, while others took longer to identify with specific emotion terms.

These findings greatly correlate with the study of Schrauf and Sanchez (2004).The most frequent emotion terms in Anglo-English and Mexican Spanish for young Anglos were *happy, sad, angry, excited, afraid, love, depressed, anxious, confused, frustrated, ecstatic* and *exhausted*. The emotion terms from the old Anglos were *sad, happy, angry, love, hate, hurt, funny, afraid, depressed, exhausted excited* and *anxious*.

The findings of this study also associate with the study of Vainik (2002). Vainik's 2002 study was conducted with 100 subjects (age between 14 and 88) involved, 50 men and 50 women. All of them were native Estonian speakers; most were inhabitants of Tallinn or its suburbs. In order to find out what words the Estonians consider as belonging to the category of emotions, an empirical study was carried out. A hundred subjects named 844 emotion terms. During the task 390 different word forms were mentioned, 58 of which were named by three individuals. The 13 most outstanding emotion terms had values equal or above the average, while 45 emotion terms scored less than the average. The four most frequent emotion terms noted by the participants were *viha 'anger'* (95% of the participants noted this emotion term*), armastus 'love' (*72%), *rõõm 'joy'* (93%) and *kurbus 'sadnes'* (86%) (Vainik, 2002).

More importantly the studies results are in accordance with the 1984 study of Fehr and Russell at the University of British Columbia in Vancouver in Canada. A series of free listing and prototypicality studies were conducted. Free listing results indicated a total of 383 different emotion terms mentioned. At one extreme were the 187 listed by only one individual and at the other extreme were four categories (happiness, anger, sadness and love) listed by more than half of the subjects. Twenty (20) emotion terms, namely *love, sadness, hate, happiness, joy, anger, depression, envy, disgust, fear, guilt, pride, worry, anxiety, excitement, respect, awe, embarrassment, boredom* and *calmness*, were selected out of this study for further analysis. According to the study of Fehr and Russell (1984), four of the most frequently identified emotion terms related to the present study, namely *anger, love, sad* and *happiness.*

The emotion term *happy* is universally and easily recognised, and is interpreted as conveying messages related to enjoyment, pleasure, a positive disposition, and friendliness (Seligman, 2004). Examples of happy expressions are the easiest of all emotions to find in photographs, and are readily produced by people on demand in the absence of any emotion. Happiness can also be a mental state of well-being characterised by positive emotions ranging from contentment to intense joy. Happy may be a practised behaviour because it is used so often to hide other emotions and deceive or manipulate other people. Happiness is a very fuzzy concept and can mean many things to many people and is normally caused by the belief that one's goals are being satisfied (Seligman, 2004). A study was conducted in Indonesia within

the positive and negative category, where the emotion term happy was identified as part of the positive category (Shaver et al., 2001).

The emotion term *sad* is often perceived as the opposite to the emotion term happy. Sad convey messages related to loss, bereavement, discomfort, pain and helplessness (Seligman, 2004). Within the negative category, there were three basic level categories, namely anger, fear, and sadness (Shaver et al., 2001). Sadness is normally caused by the belief that one's goals are not being satisfied. It tends to suppress the urge to action, since one would be acting on beliefs that have shown to be dysfunctional. Moreover, sadness opens one to a change in beliefs (Hobbs & Gordon, 2008).

In English, the emotion term *love* can refer to a variety of different feelings, states and attitudes, ranging from generic pleasure - *"Ek is lief vir die kos"* (*"I loved that meal")* - to intense interpersonal attraction - *"Ek is lief vir my metgesel" ("I love my partner"). Love* can also refer specifically to the passionate desire and intimacy of *romantic love*, to the sexual *love* of eros (Greek words for love), to the emotional closeness of familial *love*, to the platonic love that defines friendship, or to the profound oneness or devotion of *religious love* (Sternberg, 1986). This diversity of uses and meanings of this emotion term, combined with the complexity of the feelings involved, makes love unusually difficult to consistently define, even compared to other emotional states. *Love* is an emotion of strong affection and personal attachment. *Love* may also be described as actions towards others (or oneself) based on compassion (Giles, 1994), or as actions towards others based on affection (Singer, 1966).

The Oxford Concise Dictionary expands this emotion term *love* as follows: "*love* is a warm liking or affection for a person; sexual affection or passion, the relation between sweethearts; strong liking (*love*) for a thing (music), affectionate greetings, send one's love, a loved person, a sweetheart (informal), a familiar form of address and God's benevolence toward mankind" (Fowler, 2003). The emotion term *love* is clarify in the Cambers Dictionary as an affection of the mind caused by that which delights, a strong liking and devoted attachment to one of the opposite sex (Giddie & Liddell, 1938).

A study (Shaver et al., 2001) was conducted in Indonesia within the positive and negative category and within the positive category, where there were two major basic level categories, namely *love* and *happiness*.

Love has been mentioned much less often than *happiness, sadness, fear,* and *anger* in lists of biologically basic emotions (Shaver, Morgan, & Wu, 1996). With respect to positive emotions, some theorists (e.g., Kemper, 1987) do not consider love to be a basic emotion, in part because it cannot be autonomically differentiated from happiness.

The emotion term *anger* is seen increasingly often in modern society, as daily stresses and frustrations underlying anger seem to increase, but the expectation of reprisals decrease with the higher sense of personal security. Anger is a primary related to interpersonal aggression, and its expression conveys messages about hostility, opposition, and potential attack. Although frequently associated with violence and destruction, anger is probably the most socially constructive emotion as it often underlies the efforts of individuals to shape societies into better, more just environments, and to resist the imposition of injustice and tyranny (Seligman, 2004). Aristotle made the observation that anger is necessarily always directed towards someone in particular (Ekman & Davidson, 1994). Shaver et al. stated in 2001 that anger is part of the negative category of emotions.

Shweder (1991, p. 245) writes "Emotions have meanings, and those meanings play a part in how we feel. What it means to feel *angry* … is not quite the same for the Ilongot, who believe that anger is so dangerous it can destroy society; for the Eskimo, who view anger as something that only children experience; and for working-class Americans, who believe that anger helps us overcome fear and attain independence".

The definition of the emotion term *hate* is a feeling of dislike so strong that it demands action. Hate is an emotion of intense revulsion. Hateful (or hate) is a deep and emotional extreme dislike, directed against a certain object or class of objects (Reber & Reber, 2002). The objects of such hatred can vary widely, from inanimate objects to animals, oneself or other people, entire groups of people, people in general, existence, or the whole world.

Though not necessarily so, hatred is often associated with feelings of anger and disposition towards hostility against the objects of hatred (Reber & Reber, 2002).

To conclude, the emotion terms indicated on face value show a great overlap and correspondence with emotion terms in other cultural studies.

Research aim two:

To determine the most and least prototypical emotion terms in a white Afrikaans-speaking working adults group.

The emotion terms ranked as the five (5) most prototypical emotion terms for the white Afrikaans-speaking working adult group were *nice (lekker), fed up/had enough (gatvol "genoeg gehad"), loveable (liefdevol), angry (kwaad)* and *to be scared (om bang te wees).* The five (5) least prototypical emotion terms from the list generated in the free listing task were *unstable (onvas), bashfulness (skugterheid), captivation (geboeidheid), envy (naywer)* and *delight (opgetoënheid).* These emotion terms corresponds with lists of basic emotion terms found in the literature, which are happiness, anger, sadness, love, fear and hate (Bretherton & Beeghly, 1982; Ekman, 1984; Epstein, 1984; Izard, 1977).

Using a prototype approach to emotion concepts, two studies were conducted in 2006 in the Basque Country. The first study was to identify the prevalent mental state words that Basque speakers use the most to name emotions, and the second study was to map the hierarchical and family resemblance structure of the most prototypical 124 emotion concepts. The emotion terms with the 12 highest prototypicality ratings were *poza (joy, delight, happiness), amorrua (rage, anger, wrath), beldurra (fear, dread, fright), alaitasuna (happiness, joy), zoriontasuna (happiness), ikara (scare, fright, terror), errabia (rage, fury, wrath), pena (sorrow), pasioa (passion), gorrotoa (hate), izua (fear, terror, fright)* and *maitasuna (love).* Each of these words is closely related to one of the five basic-level categories obtained in the American and Indonesian studies: *love, happiness, anger, sadness* and *fear* (Alonso-Arbiol et al., 2006). When one looks at the findings reported in the above studies and in this present study, only one emotion term overlaps, namely *anger.*

Prototype research to date indicates that to the layperson *love, anger, hate,* and *jealousy* are good examples of the concept of emotion terms and that the prototype of *love* is distinguishable from both happiness (Shaver et al., 1987) and commitment (Fehr, 1988).

Fletcher and Fitness (1993) noted that *hate* and *anger*, along with *love* and *happiness*, are more or less the same. However, subjects found it difficult to discriminate between *hate* and *anger* in the hate emotion target prototype condition, where the mean rate of *anger* choices was 52% and the mean rate of *hate* choices was 28% (not a significant difference). These results clearly suggest that the symptoms, urges and behaviours relevant to *hate* are equally relevant to *anger*.

Fehr & Russell (1984) reported in their prototypicality rating study conducted using adult participants, that the subjects directly rated how good an example of emotion each of 20 target emotion terms was. *Love, hate, anger, sadness, happiness, joy* and *fear* were regarded as extremely good examples of emotions, while worry, disgust, awe, pride, calmness, boredom and respect were regarded as extremely poor examples of emotions. All of the above terms correspond with emotion terms found in the present study and with emotion terms in other cultural studies.

From the information obtained in this research it was revealed that the emotion terms *nice (lekker), fed up/had enough (gatvol/"genoeg gehad")* and *loveable (liefdevol)* are at this stage unique to the white Afrikaans language group. These terms were not found in any of the previous prototypical studies that were conducted. Thus, by using the prototype approach, these emotion terms proved to be cultural specific and would not be considered as classical emotions.

In the last two decades particular attention has been paid to ways in which emotions are expressed in different languages and cultures. Several linguists, psychologists and anthropologists (Athanasiadou & Tabakowska, 1998; Heelas, 1986; Lakoff, 1987; Levy, 1984; Lutz, 1988; Rosaldo, 1980; Wierzbicka, 1999) have demonstrated that emotion talk, concepts and scripts may differ across cultures and that some emotion terms may have no translation equivalents (Dewaele & Pavlenko, 2002). For example, in the pleasant category of

emotion terms *"lekker"* translates to English as *"nice"*, but the word nice does not fully describe the emotion felt by Afrikaans people when they use the word *"lekker"*. The emotion term *"lekker"* rolls of the tongue with ease when pleasant emotions are experienced in the Afrikaans-speaking language group. If an English-speaking person is asked to express the same kind of ecstatic emotion they would not use the word "nice". The hypothesis can therefore be made that it is possible that on a scale of 1 to 10 the emotion term *"lekker"* would rate emotionally between 8 and 10 and the word *"nice"* in the English language group would rate at around 5.

Examples of the emotion term *"lekker"* (*nice)* used most frequently by white Afrikaans-speaking working adults are *"Ek hoop jy het 'n lekker tyd gehad" ("I hope you all had a nice time"); "Dit is lekker om jou weer te sien" ("It is nice to see you again"); "Dit sal lekker wees om iets anders te probeer" ("It would be nice to try something different")* and *"Ons het 'n baie lekker aandete gehad" ("We had a very nice dinner")*. The meaning of this emotion is pleasant or pleasing or agreeable in nature or appearance.

Although the emotion term *"nice"* was translated, it refers to a global pleasant experience. Often when one smell flowers in springtime, one not only has a pleasant sensation, but experiences a rush of nostalgia as well. On the present account of emotions, one would say that we smell the flower in terms of pleasant (*nice*) scenes from one's past and that it reminds one of a pleasant (*nice*) experience (Hong & Hong, 1993). One can conclude that the moment one of the five senses (hear, taste, touch, see, smell) are activated, the emotion term *"nice" (lekker)* comes spontaneously to the Afrikaner mind. The Oxford Concise Dictionary expands on the emotion term *nice*: pleasant, enjoyable or attractive; a nice day/a nice smile/a nice place or nice weather (Fowler, 2003).

The translation for the term *gatvol* was *fed up/had enough*. The definition of the emotion term *fed up/had enough* is when you are fed up with something, you have had enough of it and want it to stop right away; you are sick of it (Oxford Dictionary). When one is fed up with something, one can be very angry about it (Fowler, 2003). The conclusion one can make is that when one is really sick and tired of something, one will experienced the emotion *fed up,* examples: *"Toe my motor onklaar geraak het, was ek gatvol vir al die betalings" ("When my*

car broke down, I was fed up with paying for repairs"); or "Ek was gatvol vir die werktuigkundige, omrede hy my altyd ekstra laat betaal" ("I was fed up with the repair man, too, because he always charged me extra money"); or "Jy weet, ek is net gatvol vir haar omrede sy my net kontak wanneer sy iets benodig" ("You know, I'm just fed up with her; she only calls when she wants something"); or "Ek is gatvol omdat jy hier bly, ek wil hê dat jy nou moet gaan" ("I am fed up with you staying here, I want you to leave right now"); and "My broer is baie gatvol vir sy werksituasie en hy wil so gou moontlik bedank" ('My brother is really fed up with his work situation and he wants to quit as soon as possible"). Another definition for fed up is to be sick of or frustrated with something. Chambers Dictionary, in its turn, states that it means having reached the limits of tolerance or patience with somebody or something (Giddie & Liddell, 1938). Oxford English Dictionary mention *fed up* when one is bored or tired to breaking-point (Fowler, 2003).

In the unpleasant category of emotion terms *"gatvol"* translates to the expression *"fed up",* that expresses a feeling of not being able to take any more and expresses the opposite deep emotion to *"lekker"*. One can assume that this emotion term experience a feeling of being unable or unwilling to put up with something any longer, for example *"Jy is siek en sat" ("You are sick and tired").* One uses the emotion term to express when one is tired of something and one cannot take it anymore and *"Ek is gatvol vir al die politiek by die werk" ("I am gatvol of all the politics at work").*

The meaning of the emotion term *loveable* offers and explains a definition of love in a way that is interesting, intense, clear, logical, and meaningful. Love is associated with feelings, affections, emotions and pleasures. The definition and meaning of love is remarkably broad and different people have different approaches to it. The Oxford English Dictionary explains *loveable* as deserving of being loved, likeable, attractive and pleasing. This emotion term means to have feelings of love or affection for somebody, or, furthermore, to find somebody pleasant and to enjoy being with them or to love somebody very much and be loyal to them (Fowler, 2003). The emotion term *"liefdevol"* translates to the English expression *"loveable",* and is from the pleasant category of emotions. It is normally related to a person's behaviour towards others. The definition of the emotion term "lovable" is of such a nature as to attract love, deserving love or good-natured and endearing.

All three of these words are frequently and readily used in the everyday lives of the Afrikaans-speaking language group.

Conclusions and recommendations (implications for practice):

The emotion terms *nice* and *fed up* are cultural specific to the Afrikaner and are used profusely within the language. Some of the emotion terms reported in this study by the participants are universal, namely *happy, sad, love* and *angry,* but in the language used cultural specific terms were identified, namely *nice (lekker)* and *fed up (gatvol).* The prototypical approach facilitated the identification of the emotion terms specific to the Afrikaner. The results indicated that this approach was the proper one to use and that the optimum results would not have been achieved using the classical approach, because the emotion terms reported in this study cannot have set conditions and fuzzy boundaries.

The implication in practice is that there exists a need to determine the emotion lexicon in specific culture groups. One needs to determine the similarities; this may give us so-called common ground with regard to the specific emotion lexicon. Emotion terms that are unique and make a culture group unique ("*nice"* and "*fed up"* to the Afrikaans language group), will impact on the way a culture group presents their emotions. It will furthermore have an impact on the way that emotions must be studied within specific culture groups. The specific and unique emotion lexicon will have an impact on the way the culture group reports on their wellness and the emotion lexicon they use to do it.

The emotional self-awareness of a culture group will have an impact on their ability to list emotions. However, if these unique emotions terms are identified, it presents a platform to know what are the unique emotions terms for that culture group. These emotion terms will make a culture group different and in understanding our differences and similarities, it will contribute to a better understanding of each other as individuals and as culture groups. Therefore it is important to identify the emotion terms specific to the Afrikaans emotion lexicon, because it is the means by which the Afrikaans population express the emotions they experience.

If the results of this study were clear in the Afrikaans-speaking language group, it is important that the other 10 language groups in South Africa be studied, because it has a great significance in the understanding of the way people express their emotions, for example when experiencing trauma in the workplace.

Out of the nine (9) provinces in South Africa, only three (3) provinces were included in the free listing study, namely the Eastern Cape, Free State and Northern Cape provinces, and seven (7) provinces were included in the prototypicality ratings, namely: Eastern Cape, Gauteng, Free State, Mpumalanga, North-West, Western Cape and KZN. Therefore it is recommended that future research should include all nine (9) provinces and should include an equal number of male and female participants. The instructions for the completion of the free listing questionnaire should include examples of emotion terms, since some participants may at first not be clear on what is expected.

Limitations:

Many of the participants reported that this was the first time they had completed such a questionnaire in general, and in particular a questionnaire based on emotions terms. The participants mentioned also that they have never been asked to report on any emotion or emotion related research. No knowledge on the emotional self-awareness of the participants were available. More females than males were willing to complete the questionnaires and subsequent studies can therefore aim to include more male participants. The study also did not investigate differences between different demographical groups, for example gender, age and level of education.

Suggestions for future research:

During this study, the emotion terms which are commonly used in white Afrikaans-speaking working adults were identified and these emotion terms unlock a new aspect that can be analysed. Future research can determine what causes the predominant emotion terms *nice, fed up* and *loveable*, and in what circumstances they are more prominent in the white Afrikaans culture group.

This article added value as the foundation laid by this study opens a wide range of possibilities for future research. Similar research should be conducted for other culture

groups in South Africa, especially the coloured Afrikaans-speaking language group. The combination of these studies will reveal the emotion lexicon of the different culture groups in South Africa and it will also indicate the similarities and differences across cultures. The 263 free listing emotion terms with the highest average rating were selected. These emotion terms can now be used as a frame of reference of the emotion lexicon in Afrikaans. There are similarities and differences in the use of the emotion lexicon. It is therefore important to investigate the cognitive structure of emotions whereby the emotion terms are sorted into categories relevant to their specific emotion family groups. The next research article will address this issue.

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CHAPTER 3

Research Article 2

THE COGNITIVE STRUCTURE OF EMOTION TERMS OF WHITE AFRIKAANS-SPEAKING WORKING ADULTS

ABSTRACT

Orientation

Within a cultural group the cognitive structure of emotions can be conceptualised as the cognitive representation of differences and similarities between emotions terms. However, the cognitive structure of emotions in a white Afrikaans-speaking working adult group has not been determined.

Research purpose

The purpose of this study was to explore the similarity of emotion terms among white Afrikaans-speaking working adults. In order to achieve this objective, the research was executed in an independent phase, with the similarity rating of the emotion terms for the Afrikaans-speaking people in South Africa being used as the measuring instrument.

Motivation for the study

One of the fundamental ways of learning about the world is by means of comparison, a process that is part of similarity sorting. Therefore, by making use of the similarities and differences which people in a common culture share, emotion dimensions can be determined within specific cultural groups.

Research design, approach and method

A survey design was used to achieve the research objectives utilising availability samples in a series of one study. The participants of the Similarity (N=131) study consisted of native Afrikaans-speaking employees. The sample consisted of participants from the white ethnicity group speaking Afrikaans within the Eastern Cape, Gauteng, Free State, Mpumalanga, North-West, KZN and Northern Cape provinces.

Main findings

From the multidimensional scaling (Similarity rating) a three dimensional structure (*evaluation, power and arousal*) were identified within a white Afrikaans-speaking working adult language group.

Practical/managerial implications

By making use of the Classical Multidimensional Scaling (Similarity Rating Task), the study will ultimately provide a broader perspective on the cognitive emotion structure of the white Afrikaans-speaking working adult language group in South Africa.

Contribution/value-adding

This study added value to the field of Industrial Psychology by providing a cognitive emotion structure in a white Afrikaans-speaking working adult population in South Africa, which can be used as a reference for other emotion research constructs.

OPSOMMING

Oriëntasie

Binne 'n kulturele groep kan die kognitiewe struktuur van emosies gekonseptualiseer word as die kognitiewe weergawe van die verskille en ooreenkoms tussen emosieterme. Die kognitiewe struktuur van emosies binne ’n volwasse groep wit Afrikaanssprekende werkers is egter nog nie vasgestel nie.

Navorsingsdoelstelling

Die doelstelling van hierdie studie was om die ooreenkoms van emosieterme binne 'n groep volwasse wit Afrikaanssprekende werkers te ontgin. Ten einde hierdie oogmerk te bereik, is die navorsing in 'n onafhanklike fase uitgevoer waarin die ooreenkomsbeoordeling van emosieterme vir Afikaanssprekendes in Suid-Afrika as meetinstrument gebruik is.

Motivering vir die studie

Een van die basiese maniere waarop mense iets oor die wêreld leer, is deur middel van vergelyking, 'n proses wat deel is van die sortering van ooreenkomste. Deur dus gebruik te maak van die ooreenkomste en verskille wat mense binne 'n gemeenskaplike kultuur deel, kan die emosiedimensies binne bepaalde kulturele groepe bepaal word.

Navorsingsontwerp, -benadering en –metode

Om die navorsingsdoelstellings te bereik, is 'n navorsingsontwerp gebruik wat beskikbaarheidsteekproewe in 'n reeks van een studie benut het. Die deelnemers aan die Ooreenkomsstudie (*N*=131) het bestaan uit eerstetaal-Afrikaanssprekende werkers. Die steekproefgroep het bestaan uit Afrikaanssprekende wit persone in die Oos-Kaap, Gauteng, Vrystaat, Mpumalanga, Noordwes, KZN en die Noord-Kaap.

Hoofbevindinge

Uit die multidimensionele skalering (Ooreenkomsbeoordeling) is 'n driedimensionele struktuur (*evaluasie*, *mag* en *aktivering*) in 'n groep volwasse Afrikaanssprekende werkers geïdentifiseer.

Praktiese en bestuursimplikasies

Deur die gebruik van Klassieke Multidimensionele Skalering (Ooreenkomsbeoordeling-taak), sal 'n breër perspektief op die kognitiewe emosiestruktuur van volwasse wit Afrikaanssprekendes in Suid-Afrika daargestel word.

Bydrae/Waardetoevoeging

Hierdie studie het waarde tot die Bedryfsielkunde toegevoeg deur 'n kognitiewe emosiestruktuur vir wit Afrikaanssprekende volwassenes in Suid-Afrika daar te stel wat as verwysing deur ander emosienavorsing-konstrukte gebruik kan word.

INTRODUCTION

Key focus of this study

Some emotions are similar to each other while others are measurably different. Self-report emotion ratings have reliably shown various dimensions and structure: firstly the circumplex structure of Russell (1980), secondly the positive and negative affect of Watson and Tellegen (1985), thirdly the tense and energetic arousal of Thayer (1989) and fourthly the eight combinations of pleasantness and activation of Larsen and Diener (1992). From these four structures, two bipolar emotion dimensions were integrated into a common space (Yik, Russell, & Feldman Barrett, 1999). The key focus of this study is to investigate if a two-dimensional emotion structure or possibly a multiple-dimensional structure are present in the Afrikaans-speaking working adult language group in South Africa.

Watson and Tellegen (1985) highlighted that a two-dimensional structure is presently the most widely utilised structure at hand. In general, these two dimensions are defined as a pleasantness-unpleasantness dimension (happy, glad versus sad, upset) and an arousal dimension (excited, tense versus relaxed, sleepy). The study that was conducted by Yik et al. in 1999 stated the results of pleasant and unpleasant dimensions as clearly bipolar opposites (Yik et al, 1999). In the early 80's, Russell also highlighted a two-dimensional circumplex model of emotion terms with very high or very low values on one dimension (e.g. arousal). The model is now commonly referred to as the "circumplex" model of emotion. This model consists of activation and valence dimensions, and is more regularly used in studies on vocal expression (Russell, 1983).

Approximately ten years later, Larsen and Diener postulated an activation dimension and an evaluation, or valence, dimension. The valence dimension relates to how well one is doing at the level of subjective experience, and ranges from displeasure to pleasure (Larsen & Diener, 1992). The activation dimension relates to a subjective sense of mobilisation or energy, and ranges from sleep to frenetic excitement (Russell & Feldman Barrett, 1999). Yik and his colleagues stated in 1999 that Watson and Tellegen's (1985) high positive affect, Larsen and Diener's (1992) activated pleasant affect, and Thayer's (1989) energy dimension are identical and each unipolar dimension has another dimension that is its bipolar opposite.

Larsen and Diener (1992) and Lazarus (1991) stated that the use of only two dimensions has been criticised on the grounds that this does not allow discrimination of certain emotional states. For that reason fear and anger, for example, are both unpleasant and highly active and in order to be able to capture qualitative differences among different emotional states, they sense that *more* dimensions are needed. There is little empirical evidence on how similar the four structures actually are, and Yik et al. (1999) mentioned that the data that exist from previous research (e.g. Burke, Brief, George, Robertson, & Webster, 1989; Feldman Barrett & Russell, 1998) have not been consistent.

However, in contrast to the two-dimensional emotion models, a third dimension that is frequently mentioned in the literature by Russell and Mehrabian (1977) and Osgood, Suci and Tannenbaum (1957) is the potency dimension. Potency may be seen as a dimension that involves cognitive appraisal of an individual's coping potential, or power, in a particular situation. This dimension has been variably referred to as potency, dominance, power, or control (Lazarus & Smith, 1988; Yik et al., 1999). Thus power may be separable into two dimensions: control (feelings that involve internal control, self-control, deliberateness and intentionality versus those that do not) and depth (feelings that have a deep, powerful or profound impact versus those that do not) (Averill, 1975).

Although two-dimensional representations are most universal, the presence of a third dimension, such as potency or dominance, is not unusual (Averill, 1975; Bush, 1973). Indeed Mehrabian (1980) proposes that three dimensions are necessary and sufficient to adequately define emotional states. Shaver, Schwartz, Kirson, and O'Connor (1987), who used only words that passed a rating test of emotionality, also found the gap and concluded that the dimensionality of emotions is three rather than two.

Osgood and his colleagues (1957) showed that a similar set of dimensions (valence, arousal and dominance) seem to be central and universal dimensions of semantic meaning. This three-dimensional model has had a strong impact on the psychology of affect and emotion. Based on this early work, dimensional models of emotion have been developed (Plutchik, 1980; Yik et al., 1999). Since the third dimension has been difficult to establish reliably in an empirical fashion via factor analyses, feeling is often defined in terms of a two-dimensional

space formed by valence and activation, often highlighting only the valence and arousal dimensions, and assuming a circumplex arrangement of emotions and emotion labels in this space (Russell, 1980; Yik et al., 1999).

If this is the case as stated in literature, and there are three and not *only* two emotion dimension structures, researchers are missing out on a comprehensive investigation of the experience of emotion sufficiently. Russell (1989), Daly, Lawrence, and Polivy (1983), as well as Havlena and Hollbrook (1983) support this argument by mentioning that much of the evidence supports a three-dimensional approach for accurately assessing emotional response and that models with less than three dimensions may not accurately assess emotional response.

Background to this study

According to Gentner and Namy (1999) and Inagaki and Hatano (1987) one of the fundamental ways of learning about the world is by means of comparison: a process that is part of similarity sorting. Therefore, by making use of the similarities and differences which people in a common culture share, emotion dimensions can be determined within specific cultural groups.

In this regard, the studies of Feldman Barrett and Russell (1998), Russell & Feldman Barrett (1999) and Feldman Barrett and Fossum (2001), maintained that there are only two principal emotion dimensions to the structure of emotions, namely pleasantness and arousal. Russell (2003) defined evaluation–pleasantness as any response to a stimulus which is designed to increase or decrease the presence of that stimulus. However, Osgood identified a three-dimensional structure in the emotion domain that is suggestive of the Evaluation-Potency-Activation (EPA) dimensions in the connotative or affective meaning of words (Osgood, May, & Miron, 1975). However, cultural anthropologists, and psychologists have for many years been debating the issue of universality and culture-specificity of these emotion dimensions and emotions per se in several landmark research studies.

The divergence of opinion started in 1872 with the important work of Charles Darwin, who favoured the universality approach. The most widely noted cross-cultural similarities occur in

the domain of facial expression (Darwin, 1872/1965). A wide variety of cultures indicate cross-cultural universality of expression for at least six emotions, namely anger, happiness, sadness, fear, surprise and disgust (Ekman, Friesen, & Ellsworth, 1972; Izard, 1971). Moreover, there may be universal action tendencies associated with certain emotions, such as lovers holding hands (Ekman et al., 1972; Izard, 1971).

The research question which will be addressed in this article is: how is the domain of emotion terms cognitively organised in the white Afrikaans-speaking working adult language group? Therefore, the aim of this article is to report on the cognitive structure of emotion terms of white Afrikaans-speaking working adults (in the results section of this article). In the remainder of this article the research literature will firstly give information on the structure of emotion dimensions by making use of the similarity sorting; secondly, it will discuss the importance of an investigation of the cognitive structure of emotions and thirdly, affirm the value of studying emotions within different culture groups.

Trends from the research literature

Affective structure has been interpreted in several different ways, each with its own measurement model, conceptual framework and accumulating literature. The structure of emotion dimensions will be discussed.

Structure of emotion dimensions

Structural analyses of emotion terms, like factor analysis and multidimensional scaling, usually result in a two- or three-dimensional structure (Russell, 1991). The first dimension is always a *pleasantness or valence dimension*, where emotion terms can be systematically ordered on a positive-negative dimension (Watson & Tellegen, 1985). Three other dimensions that often emerge are *activation* (active-passive) (Larsen & Diener, 1992; Thayer, 1996) or *arousal* (high-low) (Larsen & Diener, 1992) and *power* (strong-weak) (Larsen & Diener, 1992). As a result, it seems probable that the three dimensions universally cover the entire emotion domain (Osgood et al., 1975). The three-dimensional structure in the emotion domain is suggestive of the Evaluation-Potency-Activation (EPA) dimensions in the

connotative or affective meaning of words already identified by Osgood in 1975 (Osgood et al., 1975).

Two-dimensional emotion structure

The number of dimensions required to describe affect is two (Russell & Feldman Barrett, 1999). Two dimensions have appeared in studies of self-reported feelings: firstly for example in the semantics of affect-related words across many cultures, and secondly in ratings of facial expression of emotion (Russell, 1980, 1991). Russell and Feldman Barrett highlighted that one dimension is rarely enough to capture all of the important aspects of the space, and additional dimensions (e.g. dominance, affiliativeness) can be interpreted as cognitive construals of the causes and consequences of the affect state. For that reason, pleasantness and activation capture the core affective feelings involved in mood and emotion, but do not reflect all the components involved when people think of clear cases of emotion, such as falling in love, becoming jealous, or being ashamed of oneself (Russell & Feldman Barrett, 1999).

In focusing on the two-dimensional emotion structure, Watson and Tellegen (1985) stated that a two-dimensional structure is currently the most widely in use. These two dimensions are defined as a pleasantness-unpleasantness dimension and an arousal dimension. Examples of the pleasant-unpleasant dimension are happy, glad versus sad and upset, and with the arousal dimension are excited, tense versus relaxed and sleepy. Another two-dimensional structure, described by Russell in 1980 and 1983, is called a two-dimensional circumplex model of emotion terms. This dimension stated very high or very low values on one dimension (e.g. arousal). A third dimension such as potency or dominance go together with the two-dimensional family emotion structure (Averill, 1975; Bush, 1973). Mehrabian proposes that three dimensions are "*necessary and sufficient to adequately define emotional states"* (1980, p. 49).

The two-dimensional emotional structure has limitations, stated by Larsen and Diener (1992). Firstly, a two dimensional representation fails to capture important aspects of emotional

experience and therefore sometimes does not reflect crucial differences among some emotions. When one looks at the example of fear and anger, both are negative-high-arousal emotions that are located in the same region of the circle, yet these emotions are quite different from one another (see Larsen & Diener, 1992). Secondly, different versions of the model sometimes postulate different locations for affective states and those empirically affective states are not always located in their predicted regions of the circle (see Watson, Wiese, Vaidya, & Tellegen, 1999). Thirdly, the two-dimensional models were formulated on the basis of a selection of emotions that was not guided by systematic sampling or clear theoretical guidelines (Morgan & Heise, 1988). Regardless of these limitations, the model has achieved a great deal of acceptance as a useful representation of affect (Larsen & Diener, 1992; Plutchik & Conte, 1997).

Three-dimensional emotional structure

During Morris's (1995) observations in studying the Self-Assessment Manikin, he stated clearly that the results of Bush (1973) and Mehrabian and Russell (1977) demonstrated that all emotions can be accurately described in terms of three independent and bipolar dimensions: pleasure-displeasure, degree of arousal, and dominance-submissiveness. Mehrabian and Russell (1977) mentioned that these dimensions are self-sufficient, as differing values along any of these three dimensions can occur concurrently without affecting one another. The conclusion that was made is that emotion is not limited to isolated incidents, but rather is ever-present. Therefore, an individual is in a constant state of emotion, "a state that can be described as a region within a three-dimensional space" (Mehrabian & Russell, 1977). In this regard Osgood's semantic differential method refers to the meaning of emotions as three dimensions.

Osgood's Semantic Differential Method

Osgood's experimental research centered on the role of meaning within the context of learning theory. In 1957, Osgood and his colleagues developed the Semantic Differential Method which has been applied to the analysis of attitudes, attitude changes, personality structure, clinical diagnosis, vocational choice, consumer reactions to products and brands

and the role of meaning within different cultures. The semantic differential today is one of the most widely used scales in the measurement of attitudes (Osgood et al., 1957).

Osgood and his colleagues performed a factor analysis of large collections of semantic differential scales and found three recurring attitudes that people use to evaluate words and phrases: *evaluation, potency, and activity*. Evaluation measures highest on the adjective pair 'good-bad'. The 'strong-weak' adjective pair defines the potency factor. The adjective pair 'active-passive' defines the activity factor. These three dimensions of affective meaning were found to be cross-cultural universals in a study of dozens of cultures (Osgood et al., 1975; Osgood et al., 1957; Snider & Osgood, 1969). Various studies were successfully conducted by Osgood and his colleagues.

A first study by Osgood and his colleagues required subjects to rate verbal stimuli on 50 different bipolar scales (i.e., hot-cold, white-black, fast-slow, etc.). Factor analyses conducted on these data indicated that 50% of the variance in these judgments was accounted for by *three* factors that they termed *evaluation, activity, and potency* (Osgood, 1952; Osgood et al., 1957). A second study by Osgood determined that the same dimensional structure held equally well for verbal items in non-English-speaking cultures, as well as for judgments of nonverbal stimuli as different as sonar signals and aesthetic paintings (Osgood et al., 1957). A third study by Mehrabian and Russell (1974), and Russell (1980) constructed a set of verbal texts describing various situations (materials describing common human scenarios), and the same three-factor solution was obtained. The Semantic Differential Scale devised by Mehrabian and Russell (1974) is a widely used instrument for assessing the three-dimensional structure of objects, events and situations.

Research on the English language has obtained evidence of the same three factors in 21 different linguistic groups (Osgood et al., 1975). Osgood et al. (1975, p. 190) stated: "We have *been able to demonstrate conclusively that the three affective factors of meaning are truly pan-cultural, at least to the extent that our sample of some 21 language/culture communities is representative of all human societies".* When one consider Osgood's research work that already started in the early 50's, it is clear that the similarity sorting studies focus on a three-dimension structure.

The similarity sorting to investigation the cognitive structure

Much has already been published concerning the dimensional structure of emotions. The data-analytic techniques of factor analysis and multidimensional scaling have mostly been applied to semantic differential ratings of mood (Averill, 1975), self-report measures of emotion (Lorr & Shea, 1979; Purcell, 1982) and similarity ratings of emotions (Bush, 1973; Russell, 1980). For the present research, the similarity rating task was put into practice to define emotions consistently in emotion research and investigate the cognitive structure it consists of (Scherer, 2005).

The information inherent in the emotion itself plays a major role in determining the nature of an affective cognitive structure. An emotion such as love, happiness and anger will, for example, link to a picture or idea to form an affective cognitive structure (Izard, 1992; Tomkins, 1962) and therefore the information in the emotion provides a key to understanding the linkages between emotion and cognition. The cognitive theory states that the brain is the centre of emotions. It mainly focuses on the "direct and non-reflective" process (Sander, Grandjean, & Scherer, 2005) called appraisal, by which the brain judges a situation or an event as good or bad. In this regard, Shaver and his colleagues realised the importance of this research method when they put it into practice.

In a study conducted by Shaver, Wu, and Schwartz (1992) a similarity sorting task was carried out. The participants were asked to put emotion terms (printed on cards) with a similar meaning together in the same category, and those with different meanings in separate categories (making as few or as many categories as wished). In Kundera's (1980) book "*Book of Laughter and Forgetting*" he stated that there are also hints that different languages provide different categories for the emotions. Statistical analysis on the matrix of similarity rating (i.e. how often each was placed in the same category as another term) show a good fit for a three-dimensional structure. The three dimensions could be labelled as evaluation, potency and arousal. When one wants to understand the cognitive structure of emotions, the similarity sorting task provides valuable information.

It is hard to imagine living in a world without language. People use language in almost every aspect of life every day, from greeting others, sharing ideas and sharing feelings to describing

things. Whorf support this by saying people who speak different languages experience the world differently and therefore the relationship between language and experience is essential (Whorf, 2009). Whorf thus believes that language causes the differences in human experience. Furthermore, in grouping an infinite number of different experiences into a finite number of categories, language limits our ability to perceive differences between experiences (Whorf, 2009). Language also plays a very important role when communicating emotion in the different culture groups. In 1958, Wittgenstein emphasized that meaning is attached to the language in which it occurs (Wittgenstein, 1958, 1969). The conclusion can therefore be drawn that the meaning of an emotion terms will be imbedded in the specific language or cultural group.

In 2009, Wierzbicka affirmed that language is powerful in emotion, because it shapes one's understanding of others' mental states. To understand this concept, Wierzbicka's solution is to remove the linguistically relative aspects of emotion concepts - like icing from a cake - just to reveal the universal meanings of language in emotions. Lindquist suggests that language is a more fundamental ingredient in emotion than Wierzbicka's solution assumes. Lindquist used a metaphor to state her point. Language can be no more removed from emotion, than flour can be removed from an already baked cake. Her alternate solution is to present a constructionist view of emotion, which not only recognises the role of language in emotion, but also predicts and models its impact as language constitutes emotion experience (Lindquist, 2009). Casasanto stresses the important of language. "…People who talk differently about time also think about it differently, in ways that correspond to the preferred metaphors in their native languages" (Casasanto, 2008, p. 75). "In order to better understand the universals of human thought processes, one must also study the ways in which people can differ" (Casasanto, 2008, p. 76).

Russel (1991) explains the possibility that different languages recognise different emotions and other emotion words in other languages for which no word exists in English. An example from German is the word *Schadenfreude,* which refers to pleasure derived from another's displeasure. An example from Japanese is *itoshii,* which refers to longing for an absent loved one. Another is *ijirashii,* which refers to a feeling associated with seeing someone praiseworthy overcoming an obstacle. An example from Bengali is *obhiman,* which refers to

sorrow caused by the insensitivity of a loved one. An Arab woman had trouble learning the English word *frustration,* because her native language provided no word for that feeling. Homer's characters in the *Iliad* and the *Odyssey* had no concept *of guilt* (Dodds, 1951).

Therefore, the belief arises of an 'emotion lexicon' drawn upon by persons from a 'cultural group', where the latter term means 'speakers of the same language.' Then languages stand in for one's culture, and researchers discover that all speakers of a language share a cognitive structure for emotion (Kovecses, 1990, 2000; Wierzbicka, 1999). The conclusion can now be drawn that similarity sorting studies can lead one to understand the cognitive structure and that language plays a fundamental role in the investigation of the cognitive structure.

A number of researchers have investigated the affective cognitive structure of emotions in different cultural groups as listed below:

Similarity studies:

A study conducted in 2005 by Boster focuses on the analysis of the semantic relationships among a set of emotion terms, firstly finding equivalent sets of emotion terms in two (or more) language, secondly asking native speakers to judge the similarity of the meanings of the terms, and finally assessing the degree to which the semantic relationships among the terms are similar for the two languages (e.g. Heider, 1991; Romney, Moore, & Brazill, 1998; Russell, 1983, 1989). The results show the circumplex structure of American English emotion terms. The vertical (arousal) dimension ranges from low-arousal terms (e.g. *tired*, *sleepy*, *drowsy* and *calm*) to high-arousal terms (e.g. *alarmed*, *tense*, *angry*, *aroused*, *astonished* and *excited*). The horisontal (evaluation) dimension ranges from unpleasant emotions (e.g. *miserable*, *distressed*, *gloomy*, *sad*, *frustrated*) to pleasant emotions (e.g. *delighted*, *happy*, *pleased* and *glad*) (Boster, 2005).

The categorisation of emotion terms study was conducted in 2002 by Fontaine, Poortinga, Setiadi, & Markham. The cognitive structure of emotions was investigated by means of similarity sorting of the emotion words. The 120 emotion terms were printed. A total of 109 Indonesian and 105 Dutch students participated. Each participant received a set of cards and

was asked to sort the terms in categories of similar emotions. The instructions, which mentioned that there were no rules regarding the number of categories, were taken from Shaver et al. (1987). In the Indonesian and Dutch samples the three dimensions could in both cases be interpreted as pleasantness or evaluation (separating positive from negative emotion terms), dominance or potency (separating anger terms from fear and sadness terms), and arousal or activation (separating sadness from fear and anger terms). The results report the same three dimensions of pleasantness, dominance and arousal adequately.

A study conducted in 2002 by Fontaine et al investigated the cognitive structure of emotions in Indonesia and the Netherlands in a series of three studies. Sets of 120 emotion terms were selected based on local ratings of prototypicality for emotion. The similarities were sorted into three-dimensional (evaluation, arousal, dominance) and four-cluster (positive emotion, sadness, fear, anger) structures. Of 50 pairs of translation-equivalent terms, 42 pairs were also found to be cognitively equivalent. With these equivalent terms a good fit of a common cognitive emotion structure was demonstrated in both countries.

In another study conducted in 1991, Heider stated that the method of translation is useful to compare patterns of synonymy within and between languages. Heider presented multilingual speakers of three Sumatran languages (Bahasa Indonesia, Bahasa Minangkabau, and Javanese) with a set of target emotion words and asked them to list synonyms in each language and translation equivalents in the other languages they knew. The results very clearly demonstrated that emotion words in *one language are not neatly equivalent to emotion words in another language.* For example, the term *curiga* ('suspicious') in Bahasa Indonesia corresponds to cognate terms *curiga* and *curigo* in Bahasa Minangkabau and Javanese respectively. But two other terms in Bahasa Minangkabau are regarded as translation equivalents of the Bahasa Indonesia term *curiga* (*sak ati, badatak ati*), while two additional terms in Bahasa Indonesia are regarded as translation equivalents of the Bahasa Minangkabau term *curiga* (*syak wasangko, prasangka*). Of these the former, but not the latter, is regarded as the equivalent of the Javanese term *curigo*. Clearly, there is not a one-to-one mapping of the meanings of emotion terms in the three languages, even if the terms are cognate (Heider, 1991).

In 1987 Shaver et al studied the hierarchical structure on the emotion domain. In this study Shaver et al. (1987) wanted to establish which emotions people thought were similar to each other (which "go together"), and what emotions seemed different and therefore belonged in different categories. A total of 135 emotion terms were prepared for the participants (one hundred students in the introductory psychology courses), each containing the name of an emotion. The procedure was to sort these cards into categories representing their best judgments about which emotions were similar to each other and which were different from each other. There was no one correct way to sort the cards. One participant put all 135 terms into two categories (positive and negative). Another participant put the emotion terms into 64 categories. The participants chose affection, lust and longing for the love category; cheerfulness, zest, contentment, pride, optimism, enthrallment, and relief for the joy category; irritation, exasperation, rage, disgust, envy and torment for the anger category; suffering, sadness, disappointment, shame, neglect and sympathy for the sadness category and horror and nervousness for the fear category.

A study conducted by Russell in 1983 from several language groups (English, Gujarati, Croatian, Japanese, and Chinese) rates the similarity of 28 emotion terms. Multidimensional scaling revealed that in all five languages, emotion-related words fell into roughly a circular order in a space definable by two dimensions, namely pleasure-displeasure and arousal-sleep. Two of these dimensions, evaluation and activity, are similar to the study of Russell (1991). Lutz (1982) scaled 31 emotion-related terms in the language of Ifaluk, a small South Pacific atoll, and found two dimensions similar to evaluation and potency. Two or three of the well-known semantic-differential dimensions seem to appear in every culture.

Within a cultural group, the cognitive structure of emotions can be conceptualised as the cognitive representation of differences and similarities between emotions terms (Shaver et al., 1987). It has been found that the cognitive representation of emotion terms resembles characteristics of emotion processes. For example, the number of appraisals and the number of action tendencies shared by pairs of emotions closely relate to the cognitive similarity between corresponding emotion terms (Frijda, 1987). The cognitive structure of emotions offers a way of gaining knowledge about emotions (Reisenzein & Schimmack, 1999). According to Gentner and Namy (1999) and Inagaki and Hatano (1987) one of the

fundamental ways of learning about the world is by means of comparison, a process that is part of similarity sorting. Therefore, by making use of the similarities and differences which people in a common culture share, the dimensions can be determined within specific cultural groups.

Strong evidence exists that emotion terms are coherently organised in a dimensional structure. One well-known concept of emotion is the dimensional observation in which all emotions are characterised by two, or sometimes three, dimensions (Osgood, 1966). A number of successful similarity research studies are reported in different cultures and the conclusion can be drawn that the similarity rating task is a valuable method when investigating the similarities and differences in diverse culture groups. It is therefore necessary to take cross-cultural view when studying emotions.

Cross-cultural views on emotions

Over the years there have been different definitions of culture, with similarities as well as differences (Berry, Poortinga, Segall, & Dasen, 1992; Jahoda, 1984). Matsumoto and Yoo (2006) describe culture simply as a shared system of socially transmitted behavior that describes, defines, and guides people's ways of life. One uses culture to explain similarities within and differences between groups of people (Tooby & Cosmides, 1992).

Research on how people express emotions also investigates whether or not emotions are universal or relativistic across cultures (Elfenbein and Ambady, 2003). Emotion has a strong universal component. For example, people of different cultures can watch foreign films and understand much of their original feeling. Similarly, people can develop strong bonds with pets while communicating largely through nonverbal displays of emotion. Accordingly, messages on an emotional level can cross the barrier of a cultural or species difference. Still, although much of an emotional message is retained across these barriers, *some of the message gets lost along the way* (Elfenbein & Ambady, 2003).

Oatley and Jenkins (1996) observed that the face reveals emotion in a way that is universally understood. Happiness, surprise, fear, anger, contempt, disgust and sadness are recognised from facial expressions by all human beings, regardless of their cultural background. While some emotions are universal and are experienced in similar ways as a reaction to similar

events and stimuli across all cultures, other emotions show considerable cultural differences in their antecedent events, the manner in which they are experienced, the reactions they provoke and the way they are perceived by the surrounding society (Ekman et al., 1972; Izard, 1971). Maybe for this reason, Oatley and Jenkins (1992, p. 67) observed, "*By far the most extensive body of data in the field of human emotions is that on facial expressions of emotion"* and therefore Oatley and Jenkins (1996), Izard (1971) and Ekman et al. (1972) agree that the face reveals emotion in a way that is universally understood.

As time goes by, the issue on cross-cultural emotions and universality has occasionally been presented as if it were a conflict between two opposing camps. For example, Ekman (1984) stated that for more than 100 years scientists argued about whether facial expressions are universal or specific to each culture. On one side Darwin (1965) and, more recently, Eibl-Eibesfeldt (1972) argued that facial expressions are innate, evolved behaviour. On the other side Mead (1975) argued that facial expressions are instead like a language, socially learned, culturally controlled, and variable in meaning from one setting to another. The conclusion can be drawn that cross-cultural emotions and universality are significant and very complex.

Boster (2005) argues about the degree to which emotions are biologically gifted or culturally constructed. Ekman (1972), and Izard and Buechler (1980), on the one side of the argument, states that basic human emotions are experienced and expressed largely independently of the individual's cultural background. From a relativist's point of view Rosaldo (1980) and Lutz (1988), on the other side, argue that individuals from different cultures inhabit insufficient emotional worlds. But then there are those in the middle of the argument who distinguish between the inner experience of subjective emotional states (which are potentially universal) and the conceptual systems by which the emotions are defined and classified (which are necessarily culturally specific) (e.g. Gerber, 1985). Boster in 2005 came to the conclusion, that if all emotions are completely universal, there is nothing to compare, and if all emotions are entirely culturally specific, there is no basis for comparison. Accordingly, the only position that allows investigators to engage in detailed assessment of emotion is between subjective emotional states and theoretical systems.

One of the most important ways to study emotions is through emotion terms. Emotion terms are not necessarily the same for different cultural groups. There is an important debate between relativists and universalists, with the former stating that emotion words are culture-specific constructions, and the latter that emotion words refer to universal emotion processes (Russell, 1983; Shaver et al., 1987). If one wants to study emotions, one first have to study the emotion terms that people use in their daily lives to refer to their emotions (Fontaine et al., 2002). The work of Osgood et al., 1957 was a clear indication of the universality of a three-dimension emotion structure (*evaluation, potency* and *activity*).

Several authors have suggested that culture also influences the relation between pleasant and unpleasant emotions (Bagozzi, Wong, & Yi, 1999; Heine, Lehman, Markus, & Kitayama, 1999). Bagozzi et al. (1999, p. 646) theorised that in Western cultures pleasant and unpleasant emotions ‘‘are conceived as oppositional categories. One is either happy or sad but not both’’. That is why Western respondents are likely to perceive frequency judgements of happiness in opposition to frequency judgements of sadness. This should lead to stronger negative correlations between frequency estimates of pleasant emotions and frequency estimates of unpleasant emotions (Bagozzi et al., 1999).However, Ekman and fellow universalists acknowledge a role for culture, but they assign that role to emotional display rules. In this way, the emotions themselves are kept universal and allow culture to play a role in setting the conditions for how and when those universal emotions are experienced and expressed (Ekman et al., 1972).

From the literature review, the conclusion can be drawn that within a cultural group, the cognitive structure of emotions can be conceptualised as the cognitive representation of differences and similarities between emotions terms.

Research Objective and Hypotheses

The general research objective of this research study is to investigate the emotion terms and the cognitive emotion representation in the white Afrikaans-speaking working adult group in South Africa, by providing the emotion structure (dimensions) by making use of a similarity rating method. In order to achieve this research objective the following hypotheses were formulated:

H_1: The emotion terms featured in the Similarity Rating Task will be reliable and will denote satisfactory alpha coefficients when measured against the results of previous Similarity Rating Task Studies: 0,80 and higher.

This leads to the formulation of the following research hypotheses:

H_{2a}: The cognitive structure in a white Afrikaans-speaking working adult sample will include the evaluation-pleasantness dimension.

H_{2b}: The cognitive structure in a white Afrikaans-speaking working adult sample will include the power-control dimension.

H_{2c}: The cognitive structure in a white Afrikaans-speaking working adult sample will include the activation-arousal dimension.

The potential value-adding of this study

The potential value-adding of this study to the world of Industrial Psychology will be to provide a cognitive emotion structure in a white Afrikaans speaking working adult population in South Africa. By making use of the Classical Multidimensional Scaling (Similarity Rating Task), it will ultimately provide a broader perspective on the cognitive emotion structure of the white Afrikaans-speaking working adults that can be used as a reference for other emotion research constructs.

What will follow?

In order to understand the above, the research study will flow into a specific division. Firstly, the *method* explains the participants of this study, the measurement instrument that was used, the procedure and the statistical analyses. Secondly, the *results* of the reliability of the eight Similarity Rating Questionnaires and coordinates of the Afrikaans emotion terms on the three dimensions of the Similarity Rating Task will be provided. Thirdly, *discussion* will conclude this research article.

METHOD

Participants

The study population consisted of an availability sample of the white Afrikaans-speaking working adult (*N*=131) in South Africa. The participants' first language was Afrikaans and they participated on a voluntary basis. These white Afrikaans-speaking people were from the Eastern Cape, Gauteng, Free State, Mpumalanga, North-West, and the Western Cape provinces in South Africa. Table 1 illustrates some of the characteristics of the participants of the Similarity Rating Exercise.

Table 1

Characteristics of the Afrikaans-speaking participants of Similarity Rating Task (N=131)

Item	Category	Frequency	Percentage (%)
Language	Afrikaans	131	100
Gender	Male	31	24
	Female	100	76
Age	18-28	32	24,4
	29+	99	76
Province	Free State	29	22,1
	Gauteng	32	24,4
	Northern Cape	2	1,5
	Eastern Cape	60	46
	North-West	7	5,3
	Mpumalanga	1	0,7
Education level	Grade 12	57	43
	Certificate/Short Diploma	9	6
	3-year Diploma/Degree	19	15
	Post-graduate	23	18
	Other	23	18

The sample consisted of only white Afrikaans-speaking working adults (100%). In terms of gender, women (76%) outnumbered men (24%) by three to one. The majority (76%) were 29 years and older. The two largest parts of the overall participants were from the Gauteng

(24,4%) and Free State provinces (22,1%). Nearly half (43%) of the participants had a Grade 12 qualification, while 57% of the participants' had another level of education.

Measuring instruments: Similarity Rating Questionnaire

In a previous study (research article 1) the list of prototypical emotion terms were used to draft the Similarity Rating Questionnaire. Emotion terms with the highest average score ratings, based on prototypicality, were included to construct a final list of 56 emotion terms. The 24 prototypical emotion terms (emotion terms from the Meaning Grid instrument) are commonly used in both emotion research and daily language as reported by Scherer (2005). This representative set (24 Meaning Grid emotion terms) is chosen on the basis of (1) frequent use in the emotion literature, (2) consistent appearance in cross-cultural free listing and prototypicality rating tasks, and (3) self-reported emotion words from a large scale Swiss household study (Scherer, Wranik, Sangsue, Tran, & Scherer, 2004). The cognitive structure of emotions was investigated by means of similarity rating of the emotion words in order to conceptualise the cognitive representation of differences and similarities between various emotion terms (Shaver et al., 1987).

The list was used to construct the Similarity Rating Questionnaires and had to contain the 24 Meaning Grid terms as reported by Scherer (2005), regardless of the average score ratings. The 80 emotion terms were alphabetically listed and then transposed in Excel to combine the emotion terms into 3160 comparable pairs of emotion terms. Making use of the SPSS program (Statistical Package for the Social Sciences software program) (SPSS, 2003), these pairs of emotion terms were randomised. Pairs were then captured into eight (8) versions for the Similarity Rating Questionnaire, each containing 395 pairs of emotion terms.

Participants were requested to rate these combinations in terms of how closely related they were in meaning to their language. The participants had to indicate the relationship in meaning between the emotion terms using an 8-point response scale. The scales were 1 (*completely opposite in meaning (antonyms)*), 2 (*very opposite in meaning*), 3 (*moderately opposite in meaning*), 4 (*slightly opposite in meaning*), 5 (*slightly similar in meaning*), 6 (*moderately similar in meaning*), 7 (*very similar in meaning*) and 8 (*completely similar in meaning (synonyms)*).

Procedure

The Similarity Rating Questionnaires were compiled. Ethical aspects of the research were discussed with the participants. The test battery was administered in the Eastern Cape and Gauteng provinces. Respondents were divided into smaller groups of approximately 5 each, in order to administer the tests. A standardised procedure was followed by a qualified psychologist in order to administer the test battery. The instructions to the test were given to each participant individually. Each participant had his or her own desk and chair as well as the necessary stationery to administer the test. The auditorium was properly lit and ventilated. The supervised and controlled test session lasted for approximately 1 hour and 30 minutes.

Statistical analysis

Making use of the SPSS program (Statistical Package for the Social Sciences software program) (SPSS, 2003), the first step in the analysis included calculating the reliability coefficients of the different participants who completed the eight (8) different versions of the similarity questionnaires for the white Afrikaans-speaking working adult group. Eighty emotion words, those with the highest prototypicality ratings as well as the 24 Meaning Grid instrument terms (regardless of their protoypicality ratings) were retained. Based only on individuals who had an item total correlation above 0,30, the average similarity rating for each pair of emotion terms was computed. The second step included a Classical Multidimensional Scaling (CMDS) procedure which typically results in the systematic ordering of emotion words around specific dimensions.

Multidimensional Scaling allows for the representation of emotion words as points in a space, with the distance between two points representing dissimilarly in sorting (Borg & Groenen, 1997; Davidson, 1983; Kruskal & Wish, 1978). These analyses were carried out with PROXSCAL of SPSS. By means of an iterative procedure, PROXSCAL computes the coordinates in such a way that there are minimal deviations between the (optimally transformed) dissimilarities (= the ordinal information in the data) and the distances in the geometrical representation (= distances generated by the MDS). PROSCAL minimises the normalised raw stress which is computed as the proportion of squared distances that are not accounted for by the observed dissimilarities. This misfit or stress measure ranges from 0 to 1, with 0 meaning that all observed dissimilarities are accounted for by the distances in the

geometrical representation and 1 meaning that the observed dissimilarities are not accounted for at all by the distances in the geometrical representation. The lower the normalised raw stress, the better.

RESULTS

The reliabilities for the white Afrikaans-speaking working adult language group are reported in Table 2 on the eight (8) Similarity Rating Questionnaires.

Table 2

Reliability table of the results of the eight Similarity Rating Questionnaires

Similarity Questionnaire	Reliabilities with respondents with all item correlations of at least 0,30 (α)
Similarity Questionnaire 1 (n=18)	0,95
Similarity Questionnaire 2 (n=15)	0,95
Similarity Questionnaire 3 (n=17)	0,95
Similarity Questionnaire 4 (n=18)	0,96
Similarity Questionnaire 5 (n=16)	0,94
Similarity Questionnaire 6 (n=18)	0,94
Similarity Questionnaire 7 (n=17)	0,95
Similarity Questionnaire 8 (n=12)	0,93

*Cronbach alpha did not increase after removing item-total correlations with values less than 0.30

Inspection of Table 2 shows that acceptable Cronbach alpha coefficients were obtained for all the scales. All the alpha coefficients were higher than the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994). It therefore appears that all the measuring instruments have acceptable levels of internal consistency. All 8 versions of the similarity rating questionnaires had a reliability of more than 0,90, with the lowest version 8 (0,93) and the highest version 4

(0,96). Therefore, H_1 can be accepted*: The emotion terms featured in the Similarity Rating Task will be reliable and will denote satisfactory alpha coefficients when measured against the results of previous Similarity Rating Task Studies: 0,80 and higher.*

Next, Multidimensional Scaling was used as a statistical technique to determne the cognitive structure of the emotion terms in the white Afrikaans language group. Multidimensional Scaling is a technique for exploring similarities and dissimilarities between psychological stimuli. It takes psychological similarities between stimuli and represents them by distances between points in a low-dimensional space. In this respect it is similar to other data reduction techniques, such as factor analysis. There were strong theoretical expectations for looking at a three-dimensional structure. The three dimensional structure represented the observed data very well: the Normalized Raw Stress was ,021; Stress-I is :145; the Dispersion Accounted For (D.A.F.) was ,97894; and the Tucker's Coefficient of Congruence: ,98942. The full three-dimensional representations could be well interpreted (see Table 3).An explanation of the different dimensions is given in the footnote.

Table 3

Coordinates of the Afrikaans emotion terms on the three dimensions of the Similarity Rating Task

	Afrikaans	**English**	**Dimension**		
			1	**2**	**3**
			Evaluation-Pleasantness Dimension (Pleasant vs Unpleasant)	***Power-Control Dimension*** (Weakness vs Dominance)	***Activation-Arousal Dimension*** (High vs low)
1	kwaad	anger	**-0,56**	-0,25	0,10
2	vrees	fear	**-0,51**	-0,02	-0,40
3	angs	anxiety	**-0,44**	0,02	-0,33
4	gelukkig	happy	**0,90**	-0,12	0,11
5	liefde	love	**0,80**	0,17	-0,06
6	haat	hate	**-0,49**	-0,49	0,18
7	stres	stress	**-0,52**	0,02	-0,22

8	trots	pride	**0,77**	-0,40	0,13
9	irritasie	irritation	**-0,48**	-0,33	-0,09
10	skuld	guilt	**-0,53**	0,42	0,01
11	verrassing	surprise	**0,69**	-0,17	-0,51
12	blydskap	joy	**0,90**	-0,12	-0,09
13	plesier	pleasure	**0,92**	-0,25	-0,05
14	belangstelling	interest	**0,82**	0,35	-0,19
15	teleurstelling	disappointment	**-0,46**	0,12	0,19
16	wanhoop	despair	**-0,52**	0,20	0,10
17	tevredenheid	contentment	**0,90**	-0,12	0,22
18	seer	hurt	**-0,36**	0,18	0,19
19	meegevoel	sympathy	**0,36**	0,56	0,08
20	woede	anger	**-0,60**	-0,28	0,00
21	verliefdheid	being in love	**0,80**	0,08	-0,26
22	ongelukkigheid	unhappiness	**-0,52**	0,04	0,12
23	skok	shock	**-0,43**	0,23	-0,38
24	frustrasie	frustration	**-0,46**	-0,16	-0,10
25	spanning	tension	**-0,37**	-0,01	-0,29
26	moedeloosheid	dejection	**-0,57**	0,24	-0,04
27	opgewektheid	cheerfulness	**0,84**	-0,27	-0,11
28	kalmte	calmness	**0,82**	0,24	0,40
29	vreugde	joy	**0,94**	-0,14	-0,30
30	aggressie	aggression	**-0,56**	-0,39	-0,12
31	bekommernis	worry	**-0,39**	0,32	-0,29
32	paniek	panic	**-0,50**	-0,04	-0,40
33	ongeduld	impatience	**-0,44**	-0,33	-0,23
34	vriendelikheid	friendliness	**0,91**	0,12	0,10
35	depressie	depression	**-0,48**	0,14	-0,01
36	genot	enjoyment	**0,91**	-0,25	0,03
37	vrede	peace	**0,88**	0,02	0,30
38	hoop	hope	**0,91**	0,16	-0,11
39	iesegrimmigheid	querulousness	**-0,35**	-0,32	0,10
40	rustigheid	peacefulness	**0,84**	0,19	0,38
41	afsku	disgust	**-0,47**	-0,42	0,36
42	geduldig	patient	**0,80**	0,17	0,38
43	opgewondenheid	excitement	**0,80**	-0,25	-0,25
44	ontsteltenis	dismay	**-0,50**	0,05	-0,06
45	vrolikheid	merriness	**0,92**	-0,10	-0,03

46	blymoedigheid	cheerfulness	**0,92**	-0,02	0,11
47	mismoedigheid	glumness	**-0,49**	0,25	0,18
48	negatiwiteit	negativity	**-0,51**	-0,08	0,11
49	hopeloosheid	hopelessness	**-0,48**	0,23	0,01
50	pessimisme	pessimism	**-0,38**	-0,15	0,32
51	magteloosheid	powerlessness	**-0,47**	0,27	-0,10
52	joligheid	joy	**0,89**	-0,29	-0,19
53	buierigheid	moodiness	**-0,52**	-0,22	0,00
54	vernedering	humiliation	**-0,48**	0,08	0,45
55	dankbaarheid	thankfulness	**0,92**	0,05	-0,01
56	norsheid	grimness	**-0,47**	-0,27	0,33
57	onsekerheid	uncertainty	**-0,34**	0,09	-0,20
58	hartseer	sad	-0,30	**0,34**	0,06
59	jaloesie	jealousy	-0,29	**-0,57**	-0,07
60	skaamte	shame	-0,08	**0,62**	0,05
61	walging	revulsion	-0,42	**-0,56**	0,32
62	emosioneel	emotional	-0,02	**0,06**	-0,05
63	simpatie	sympathy	0,29	**0,70**	0,26
64	verlange	longing	0.10	**0,57**	-0,24
65	berou	regret	-0,28	**0,57**	0,24
66	verdriet	sorrow	-0,39	**0,40**	0,11
67	hoogmoed	pride	0,10	**-0,79**	0,33
68	smart	woe	-0,38	**0,45**	0,19
69	jammerte	sorrow	-0,08	**0,63**	0,35
70	vyandigheid	animosity	-0,46	**-0,49**	0,15
71	minagting	contempt	-0,38	-0,30	**0,48**
72	senuweeagtigheid	nervousness	-0,23	-0,02	**-0,42**
73	verwarring	confusion	-0,30	0,13	**-0,36**
74	histerie	hysteria	-0,27	-0,28	**-0,36**
75	twyfel	doubt	-0,28	0,17	**-0,44**
76	belediging	insult	-0,39	-0,29	**0,48**
77	moegheid	tiredness	-0,28	0,15	**0,45**
78	nuuskierigheid	inquisitiveness	0,50	-0,22	**-0,68**
79	benoudheid	anxiety	-0,40	0,10	**-0,43**
80	rusteloosheid	restlessness	-0,30	-0,11	**-0,34**

Note: Dimension 1: Evaluation-Pleasantness, where pleasant emotions are opposed to unpleasant emotions. Dimension 2 Power-Control, with anger as opposed to sadness. Dimension 3: Activation-Arousal, with fear terms are opposed to, for instance restfulness.

** Stress and Fit Measures: Normalised raw stress: 0,21. Tucker's Coefficient of Congruence: 1,0.

The similarity rating task in the present study (Table 3) revealed three results of the Multidimensional Scaling. The first dimension was labelled *evaluation-pleasantness dimension* (where pleasant emotions are opposed to unpleasant emotion terms). The second dimension was labelled *power-control dimension* (with anger as opposed to sadness). The third dimension was labelled *activation-arousal dimension* (with fear terms are opposed to, for instance restfulness).

The first dimension according to Table 3 that emerged, was an *evaluation-pleasantness dimension*. This dimension evaluates the pleasantness versus the unpleasantness of an emotion. This dimension is characterised by intrinsic appraisals of pleasantness and goal conduciveness and action tendencies of approach versus avoidance (Fontaine, Scherer, Roesch & Ellsworth, 2007). Examples of emotion terms such as anger (kwaad), fear (vrees), anxiety (angs), happiness (gelukkig) and love (liefde) appeared. Unpleasant emotion terms included for example anger (kwaad), fear (vrees) and anxiety (angs) and pleasant emotion terms included happy (gelukkig) and love (liefde). H_{2a} can thus be accepted: *The cognitive structure in a white Afrikaans-speaking working adult sample will include the evaluation-pleasantness dimension.*

The second dimension that emerges was a *power-control dimension.* This dimension is characterised by appraisals of control, how powerful or weak a person feels when a particular emotion is experienced. This includes feelings of dominance or submission, the impulse to act or withdraw and changes in speech and parasymphatic symptoms (Fontaine et al., 2007). Examples of emotion terms that emerged on this dimension included sad (hartseer), jealousy (jaloers), shame (skaamte) and revulsion (walging). Emotion terms that were indicative of weakness included sad (hartseer) and sorrow (verdriet) compared with emotion terms more indicative of dominance – jealously (jaloesie) and revulsion (walging). H_{2b} can thus be accepted: *The cognitive structure in a white Afrikaans-speaking working adult sample will include the power-control dimension.*

The third dimension which emerged, was an *activation-arousal dimension*. According to Fontaine et al. (2007) this arousal dimension is characterised by sympathetic arousal e.g. rapid heartbeat and readiness for action. Examples of emotion terms on this dimension included contempt (minagting), nervousness (senuweeagtigheid), confusion (verwarring) and

hysteria (histerie). Emotion terms that can be indicative of low arousal included confusion (verwarring) and doubt (twyfel) vs emotion terms with high arousal (hysteria (histerie); unsult, belediging). H_{2c} can thus be accepted: *The cognitive structure in a white Afrikaans-speaking working adult sample will include the activation-arousal dimension.*

DISCUSSION

If it is indeed as stated in literature, and there are three and not *only* two emotion dimension structures, researchers are missing out on a bigger picture for not drawing on the experience of emotion sufficiently. Russell (1989), Daly et al. (1983) as well as Havlena and Hollbrook (1983) support my argument by mentioning that much of the recent evidence supports a three-dimensional approach for accurately assessing emotional response and that models with less than three dimensions may not accurately assess emotional response. Within cultural settings, emotion structures can be a representation of differences and similarities between emotions terms (Shaver et al., 1987). Although international studies have confirmed (Fontaine et al., 2007) the universal representation of three emotion dimensions in the cognitive structure of emotions across different cultures, the emotion structure in a white Afrikaans-speaking working adult group was yet to be determined.

The research objective of this study was to determine the similarity of emotion terms within white Afrikaans-speaking working adults. The research was based on the information reflected in the prototypicality rating of the emotion terms for the Afrikaans-speaking people in South Africa, and that was used as the measuring instrument.

In order to achieve this objective, the cognitive structure of emotion terms of white Afrikaans-speaking working adults were determined by making use of a similarity rating task, firstly by determining if the emotion terms in Afrikaans can be represented in a cognitive structure, and secondly by determining if three emotion dimensions, namely evaluation, potency, and activity (Osgood et al., 1957), was represented in this emotion structure.

From the results of the Multidimensional Scaling (similarity rating) a three-dimensional cognitive emotion structure was identified. A three-dimensional representation could be well interpreted for the white Afrikaans-speaking working adult group and was decided upon, based on theoretical expectations. In this regard Scherer, Schorr, and Johnstone (2001) report that there is a major challenge to develop and test hypotheses about which aspects of emotion are universal and which are culturally specific. Next, each research hypothesis will be discussed.

H_1: The emotion terms featured in the Similarity Rating Task will be reliable and will denote satisfactory alpha coefficients when measured against results of previous Similarity Rating Task Studies: 0,80 and higher can be accepted.

The results indicated that H_1 was accepted. With regards to reliability, the similarity rating task (in the form of eight versions of the measurement instrument (comparing each of the 80 terms to one another) was highly reliable done with alpha coefficients ranging from 0,93 for version 8 to 0,96 for version 4. All the alpha coefficients were higher than the guideline of $\alpha > 0, 70$. The conclusion can thus be drawn that the similarity rating task using 80 emotion terms is a reliable scientific method that can be used in future cross-cultural emotion studies.

H_{2a}: The cognitive structure in a white Afrikaans-speaking working adult sample will include the evaluation-pleasantness dimension.

H_{2a} accepted as the cognitive structure was inclusive of the *evaluation-pleasantness dimension*. The first dimension according to Table 3 that emerged, was an evaluation dimension. This dimension evaluates the pleasantness versus the unpleasantness of an emotion. This dimension is characterised by intrinsic appraisals of pleasantness and goal conduciveness and action tendencies of approach versus avoidance (Fontaine et al., 2007). Examples of emotion terms such as *anger (kwaad), fear (vrees), anxiety (angs), happy (gelukkig)* and *love (liefde)* appeared. A further investigation on the dimension indicated unpleasant emotions such as *anger (kwaad), fear (vrees)* and *anxiety (angs)* versus pleasant emotions such as *happiness (gelukkig)* and *love (liefde).* Bagozzi et al. (1999) and Heine et al.

(1999) have suggested that culture influences the relation between pleasant and unpleasant emotions.

The first emerging factor, the *evaluation-pleasantness dimension*, was also identified by Fontaine et al. (2007). Activation is a dimension of experience that refers to a sense of mobilisation or energy. A person senses being somewhere on a continuum ranging from sleep (at the low end), through drowsiness, relaxation, alertness, hyperactivation and, finally, frenetic excitement (at the opposite end) (Feldman Barrett, 1998). All known human languages have words to communicate pleasure or displeasure (Wierzbicka, 1992), and the pleasure-displeasure dimension is pancultural in emotion lexicons (Russell, 1991). The activation dimension has been prominent in theories of emotion throughout most of this century. From the perspective of Russell and Feldman Barrett (1999), both activation and pleasantness are dimensions of conscious experience that have neurophysiological correlates. Pittam (1994) mentioned that the pleasure dimension refers to how positive or negative the affect is; this is also referred to as the evaluative, pleasantness, valence, valency, hedonic valence or evaluation dimension (Pittam, 1994).

Feldman Barrett in 2004 mentioned that valence refers to the hedonic quality (pleasure or displeasure) of, and arousal to the felt activation associated with, affective phenomena. All affective stimuli (i.e., emotion-related language, facial expressions of emotion, emotional episodes such as anger, sadness, and fear, as well as nonemotional affective states like fatigue, sleepiness, and placidity) can be characterised as combinations of these two independent dimensions (Russell & Feldman Barrett, 1999). It is of particular importance that all emotion-related terms can be characterised in terms of valence and arousal properties (Feldman Barret, 2004).

$H_{2b:}$ The cognitive structure in a white Afrikaans-speaking working adult sample will include the power-control dimension.

H_{2b} was accepted as the dimension inclusive of the *power-control dimension*. The second dimension which emerged was a *power* dimension. This dimension is characterised by appraisals of control and how powerful or weak a person feels when a particular emotion is experienced. This includes feelings of dominance or submission, the impulse to act or

withdraw, and changes in speech and parasymphatic symptoms (Fontaine et al., 2007). Examples of emotion terms on this dimension included *sad (hartseer), jealousy (jaloers), shame (skaamte)* and *revulsion (walging)*. The *power* or *potency* dimension relates to the degree of power or sense of control over the affect or emotional state, and helps distinguish emotions initiated by the subject from those elicited by the environment, e.g. contempt versus fear; this has also been called the strength, dominance, confidence or control dimension (Pittam, 1994).

Averill (1975) stated *potency* or *control* describes emotions such as confident, cruel and composed as opposed to helpless, terrified and spellbound. The depth-of-experience factor contrasts serious, profound emotions such as spiritual and loving with more shallow emotions such as giddy, peevish or coy. Therefore, Averill mentioned that the potency dimension may be separable into two dimensions: control (feelings that involve internal control, self-control, deliberateness and intentionality versus those that do not) and depth (feelings that have a deep, powerful or profound impact versus those that do not) (Averill, 1975). Russell and Mehrabian (1974) defined this dimension as more of a mere intensity of feeling and stated that a 'powerful' emotion can be easily misconstrued as merely a 'strong' emotion, rather than an emotion of strength. This *power-control* dimension has been popular since 1957 when Osgood's research work started.

$H_{2c:}$ The cognitive structure in a white Afrikaans-speaking working adult sample will include the activation-arousal dimension.

H_{2c} accepted as the cognitive structure was inclusive of the *activation-arousal dimension*. The third dimension that emerges was an *arousal* dimension. According to Fontaine et al. (2007) this *arousal* dimension is characterised by sympathetic arousal, e.g. rapid heartbeat and readiness for action. Examples of emotion terms on this dimension included contempt (minagting), nervousness (senuweeagtigheid), confusion (verwarring) and hysteria (histerie). The *arousal* dimension refers to the degree of intensity of the affect and ranges "from sleep to frantic excitement" (Pittam, 1994). It is also referred to as the activity, activation, intensitive or intensity dimension.

The *arousal* dimension is also called activation. Cowie (2000) stated that arousal expresses the degree of excitement felt by people, from calm to exciting. The *arousal* dimension can be a multipart- rather than a unitary process which may require multiple physiological measures (Olson & Ray, 1985). Barrett (1998) defined *arousal* as a bodily activation as well as the level of alertness or activation on a continuum ranging from extreme wakefulness to extreme drowsiness (Duffy, 1962; Humphreys & Revelle, 1984). According to Osgood et al.'s theory (1957) the arousal dimension refers to how excited or apathetic the emotion is. Although the valence dimension has been the focus in affective priming research, current theoretical models claim that not only valence but also the degree of activation associated with a stimulus, the so-called arousal dimension, plays an important role in affective processing (Lang, Bradley, & Cuthbert, 1997).

Conclusions and recommendations:

It is clear that although in the similarity rating methods of the studies indicated above made use of a different number of emotion terms (example) in each study, the *80 emotion terms* used in this study very clearly represented a three-emotion dimensional structure, making the method followed in the present study a highly reliable one.

The results that were found, confirmed the theory of Osgood et al. (1957) that a three-emotion dimensional structure could be universally represented across cultures. The three-emotion dimensional structure was replicated in a white Afrikaans-speaking working adult group (*evaluation-pleasantness, power-control* and *activation-arousal dimension).* Thus, although literature indicates that a two-dimensional structure can almost always be found the results of the current study were in accordance with that of Osgood et al. (1957). The method of similarity sorting using 80 emotion terms proved to be highly reliable across the eight versions of the measurement used in this study. The results of this study can now be used as a frame of reference on which other emotion research can be built upon.

Limitations:

The nature of the similarity rating questionnaire was very time-consuming and participants complained that the questionnaire itself was too long. Many of the participants reported that this was the first time they had completed such a questionnaire in general, and in particular a questionnaire based on emotions terms where one has to indicate to which extent each of the

pairs of emotion terms has the same meaning in your language. The participants mentioned that they had to really think carefully about the pairs of emotions before they could answer the question. More females than males were willing to complete the questionnaires and subsequent studies can therefore aim to include more male participants. The males that were willing to complete the questionnaire mentioned that they were tired afterwards because the questionnaire demands time, energy and lots of thinking.

Suggestions for future research:

The findings of this study should be compared with research on other culture groups, as it will assist the understanding of the similarities and differences between the culture groups and how emotions are experienced within the different groups. Therefore, it would be interesting to determine if similarities and differences exist between all 11 official language groups in South Africa. Research should also be conducted in the provinces that were not included in this research.

Russell (1989), Daly et al. (1983) as well as Havlena and Hollbrook (1983) mention that much of the evidence supports a three-dimensional approach for accurately assessing emotional response and that models with less than three dimensions may not accurately assess emotional response. Therefore, models with less than three dimensions may not be enough for the purpose of studying similarity sorting when investigation the cognitive structure in the Afrikaans-speaking working adult language group in South Africa. To add value to the world of Industrial Psychology, the three-dimension structure (*evaluation-pleasantness, power-control* and *activation-arousal dimension)* that was found in the present study, is very important and valuable when studying the meaning of emotion in the context of emotion features (all the components that emotions are made up off). Therefore, this will be the aim of the subsequent research article.

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CHAPTER 4

Research Article 3

THE MEANING OF EMOTION AMONG WHITE AFRIKAANS-SPEAKING WORKING ADULTS IN SOUTH AFRICA: A MEANING GRID-APPROACH

ABSTRACT

Orientation

Using a componential emotion theory approach, other researchers determined a four-factor emotion dimension structure with respect to the meaning of emotion terms, namely evaluation–pleasantness, power-control, activation-arousal and unpredictability, in Dutch-, English- and French-speaking student sample groups. This is a far more complex emotion structure than the two-emotion dimensional structures found in literature or three-dimensional cognitive emotion structures found in similarity sorting studies.

Research purpose

The purpose of this study was to determine the meaning of emotion (emotion dimension structure), according to the componential emotion theory approach, in a sample of white Afrikaans-speaking working adults.

Motivation for the study

Although the *cognitive* emotion structure in the Afrikaans-speaking adult group revealed a three-dimensional structure, the meaning of emotion in the context of emotion features (emotion components) is not yet determined in this sample group. A four-dimension emotion structure found by other researchers in international studies has not yet been determined in this sample group.

Research design, approach and method

A survey design and an availability sample (N=120) in the Eastern Cape, Free State and Gauteng provinces in South Africa was utilised for this study. The Meaning Grid was translated and back-translated and adapted for use in Afrikaans.

Main findings

The 24 emotion terms in the Meaning Grid referred to all the components of the componential emotion theory. A three-factor solution was found which represented four emotion dimensions (evaluation, arousal/unpredictability and power).

Practical/managerial implications

When emotions are investigated in this sample group, the inclusion of all the emotion dimensions needs to be taken into account with regard to measurements and interventions concerning emotions, especially with regard to power and unpredictability. Two-emotion dimensional models are not sufficient to study emotions in this sample group.

Contribution/value-adding

The meaning of emotions in a white Afrikaans-speaking working adult group in the context of emotion features was determined. The meaning of emotions for this sample group is far more complex than the two-dimensional emotion models that are found in literature. A three-emotion dimensional model was determined that was universal to the emotion structures found in European samples.

OPSOMMING

Oriëntasie

Met behulp van die komponensiële emosieteorie, ander navorsers het tydens 'n studie met Nederlands-, Engels- en Franssprekende studente-steekproefgroepe 'n vier-faktor dimensiestruktuur oor die betekenis van emosieterme, te wete evaluering, mag, aktivering en onvoorspelbaarheid ontwikkel. Hierdie is 'n baie meer komplekse emosiestruktuur as die twee-emosie dimensionele strukture wat in die literatuur beskryf word of die driedimensionele kognitiewe emosiestrukture uit soortgelyke studies.

Navorsingsdoelstelling

Die doelstelling van hierdie studie was om die betekenis van emosie (emosiedimensie-struktuur), in terme van die komponensiële emosieteorie in 'n steekproefgroep wit Afrikaanssprekende volwasse werkers te bepaal.

Motivering vir die studie

Alhoewel die *kognitiewe* emosiestruktuur in die groep Afrikaanssprekende volwassenes 'n driedimensionele struktuur aan die lig gebring het, is die betekenis van emosie in die konteks van emosiekenmerke (emosiekomponente) in dié groep nog nie bepaal nie. ’n Vier-dimensie emosiestruktuur wat in internasionale studies gevind word, is nog nie vir dié groep bepaal nie.

Navorsingsontwerp, -benadering en –metode

'n Navorsingsontwerp en 'n beskikbaarheidsteekproef (*N*=120) in die Oos-Kaap-, Vrystaat- en Gauteng-provinsies in Suid-Afrika is vir die studie gebruik. Die Betekenismatriks is vertaal en terugvertaal en aangepas vir gebruik in Afrikaans.

Hoofbevindinge

Die 24 emosieterme in die Betekenismatriks het verwys na al die komponente van die komponensiële emosieteorie. 'n Drie-faktor oplossing is gevind wat vier emosiedimensies verteenwoordig (evaluasie, aktivering/onvoorspelbaarheid en mag).

Praktiese en bestuursimplikasies

Wanneer emosies in hierdie steekproefgroep ondersoek word, moet die insluiting van al die emosiedimensies in ag geneem word met betrekking tot metings en intervensies oor emosies, veral ten opsigte van vermoë en onvoorspelbaarheid. Twee-emosie dimensionele modelle is nie voldoende om emosies in hierdie steekproefgroep te bestudeer nie.

Bydrae/Waardetoevoeging

Die betekenis van emosies in 'n groep wit Afrikaanssprekende werkers binne die konteks van emosiekenmerke is bepaal. Die betekenis van emosies vir hierdie steekproefgroep is baie meer kompleks as die tweedimensionele emosiemodelle wat in die literatuur aangetref word. 'n Drie-emosie dimensionele model is bepaal wat universeel is vir die emosiestrukture wat in Europese steekproefgroepe gevind is.

INTRODUCTION

Key focus of this study

Similarity sorting results (research article 2) revealed that emotions are a three-dimensional cognitive emotion structure in the white Afrikaans-speaking adult group, namely *evaluation, power and arousal.* These findings are in contrast with what is find in the literature, namely two-dimensional emotion structures inclusive of pleasantness and arousal (Feldman Barrett & Russell, 1998; Russell & Barrett, 1999; Feldman Barrett & Fossum, 2001). In moving towards a comprehensive understanding of the manifestation of emotions in the white Afrikaans-speaking adult working group, the *meaning* of these terms in the context of all emotion features also needs to be determined. The meaning of emotions (emotion structure) can be determined by an investigation of emotion terms in the context of all the building blocks of emotions (components of emotions) (Fontaine, Scherer, Roesch and Ellsworth, 2007). It must be determined if an emotion structure can be revealed when emotion terms (the use of emotions linguistically) are investigated in the context of emotion processes (emotion components). Therefore, the *goal* of this article is to report on the meaning of Afrikaans emotion terms in the context of emotion components – all that emotions are made up off – providing an emotion structure in a white Afrikaans-speaking adult sample group.

Background to this study

Emotion terms are used both in daily language and in psychological assessment instruments (Jung, 1971; Myers, 1995). However, these are only generalised impressions of what people mean when they use emotion words or when they rate emotion items in a psychological assessment instrument, making this practice questionable (Rorschach, 1998). There are huge debates about what emotions are and what people mean when they use or rate emotion words (Averill, 1997; Ekman & Davidson, 1994). Therefore determining the meaning of emotion terms becomes important to gain an understanding of what is measured in emotion measurement instruments (Ekman & Davidson, 1994; Ekman & Rosenberg, 1997; Feldman, 1995; Watson & Greer, 1983).

In this regard Fontaine et al. (2007) urge investigation into the meaning of emotion terms in self-report measures. Many aspects of the emotion process can only be studied through self-

report measurements (Fontaine et al., 2007; Fraley, Waller & Brennan, 2000), as they refer to the phenomena that individuals experience; therefore, self-report measures are clearly the most popular and widely used measures of emotion (Fontaine et al., 2007; Shaver, Belsky, & Brennan, 2000). Self-report measures rely on participants to respond to their experience of emotion truthfully through the use of rating scales or adjective checklists (Fontaine et al., 2007). Therefore, Hogan (1991) states that self-report measures represent the inner nature of personality that includes the structures, dynamics, and processes within a person, whereas social reports reflect a person's social reputation, or one's public persona. Although Paulhus (1984) believes self-reporting bias is self-deception or unconscious bias that is not strategic, several other emotion researchers by contrast have noted that emotional intelligence (Connelly, Helton-Fauth, & Mumford, 2004) and emotion in general (Watson & Clark, 1997) may be best measured through self-report because the experience of emotion is generally private and not necessarily outwardly observable by others.

There are several ways of testing the information gathered during self-report measures. Ekman (1979) states that it is the face that communicates the emotions which are an integral part of our daily lives. Further, Banse and Scherer (1996) noted that it is possible to link objective observation with the information gleaned from the emotions displayed during vocal expression. Facial and vocal expressions, according to these studies, provide objective data for measuring emotion responses. This data can be further supplemented by subjective information provided by two-dimensional emotion models that measurement instruments like the Positive and Negative Affectivity Scale are based on.

The PANAS (Watson, Clark & Tellegen, 1988) has been the measure most widely used by researchers who adopt a dimensional approach to studying affective states. Items in the PANAS instruct individuals to indicate the extent to which they experience each of 20 emotions, with ten of the emotions reflecting positive affect (PA) and the remaining ten reflecting negative affect (NA). These self-report emotion measures, however, must also take cognisance of the cultural differences which underlie emotion terms in different cultural groups (Mesquita & Frijda, 1992; Church, Katigbak, Reyes, & Jensen, 1999).

The same emotion terms may, for example, elicit vastly different responses in individuals from different racial, ethnic, religious and even national backgrounds (Mesquita & Frijda, 1992; Church et al., 1999). Cross-cultural similarities (as well as differences) exist across all aspects and dimensions of emotions (Mesquita & Frijda, 1992). Church et al. (1999) state that self-report structures are essential, especially within cross-cultural studies, in investigating the conceptual organisation of emotions. However, there are various means of supplementing the information elicited from people during the process of answering emotion self-report measures questionnaires. These include the objective data observed from facial (Ekman, 1979) and vocal expressions (Scherer, Wallbott & Summerfield, 1986), as well as the more subjective information volunteered by the participants as a result of their own subjective experiences (Watson et al., 1988).

The conclusion can be drawn that emotions are common concepts and people believe that they know and are familiar with what emotions are. People experience emotional states and sense them in others (Ekman & Davidson, 1993). However, the concept of ‘‘emotion’’ presents a particularly difficult problem for empirical study, since there are many definitions of what emotions are, and how they relate to the study of very different aspects of psychological functioning. Apart from this, emotion measures like the Positive and Negative Affectivity scale (PANAS) are based on two-emotion dimensional models, which seem insufficient to measure the complexity of emotions. Fontaine et al. (2007) argues for the investigation of emotion terms in the context of emotion features. Emotion measures also need to take culture into consideration when emotion structures are determined.

The aim of this article is to report on the structure of emotion dimensions by making use of a componential emotion theory approach. The literature review will thus focus on an overview of the meaning of emotions. Thereafter the componential emotion theory as framework for studying emotions will be presented. Lastly, attention will be given on the cross-cultural views of emotions with the componential emotion approach as a solution to study all components of emotions in cultural groups. Reference to the white Afrikaans-speaking group will be made.

Trends from the research literature

What are emotions?

There is strong disagreement about the definition of emotions (Fehr, Russell, & Ward, 1982; Scherer, 2005). The concept emotion is clarify in the Random House Unabridged Dictionary (Flexner, 1993) as an affective sense or state of consciousness in which the basic human emotions of joy, sorrow, fear, hate, or the like are experienced. The Oxford Concise Dictionary expands this definition and in turn defines an emotion as an agitation of mind, feeling and excited mental state (Fowler, 2003). The Chambers Dictionary, in its turn, states that emotions are a moving of the feelings, agitation of mind, one of the three groups of the phenomena of the mind - feeling; cognition and will, and distinguished from cognition and will (Giddie & Liddell, 1938). Other dictionaries, (e.g. The Reader's Digest Dictionary and Collins Dictionary), focus on different aspects or combinations of the aspects described above.

These dictionary definitions indicate the multitude of ways in which different people view the concept of "emotion", and the different shades of understanding, interpretation and description which the term "emotion" evokes, even among lay people. This semantic problem extends into the realms of scientific research. In the emotion literature there is a huge divergence about what emotions are (Kleinginna & Kleinginna, 1981a, 1981b). In their research articles, Kleinginna and Kleinginna had already reviewed more than one hundred definitions by 1981. The number of scientific definitions proposed as to what exactly constitutes an emotion has grown to the point where defining what emotions is a difficult task. Thus, even though the term emotion is used very regularly, to the point of being extremely fashionable these days, the question ''what is an emotion?'' rarely generates the same answer from different individuals or scientists alike (Kleinginna & Kleinginna, 1981a, 1981b).

When investigating the history of what emotions are, William James gave an authoritative answer in the year 1884, but only succeeded in starting an ongoing debate (Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric 2005). Different researchers have different answers as to what exactly emotions mean (Scherer, 2005). Izard (1977), Plutchnik (1980) and Scherer (1984), described emotion as a psychological construct consisting of cognitive

appraisal, physiological activation, motor expression, motivation, behavioural readiness, and subjective feelings. Russell (1991) confirmed that these are all facets of the emotional concept. Because of the subjectivity and ambiguity surrounding the meanings, the interpretations, the experiences, the observations and the behaviours motivated by "emotions", however, any study of the phenomenon must take notice of several fundamental problems with which researchers of the concept are faced.

Most research in the past on the meaning of emotion has focused on the degree to which emotion terms register on a positive/negative affectivity continuum (Judge, Thoresen, Bono & Patton, 2001; Zautra, Affleck, Davis, Tennen, & Fasman, 2005). These research studies have tended to focus on the intensity of the dimensions of positive and negative affectivity as the best way to describe the underlying structures of affect.

Other theorists have tended to focus on different methods of interpreting the expression or experience of emotion. These approaches have included the study of facial expression by Ekman (1979) and Izard (1977). Scherer et al. (1986), on the other hand, focus on vocal expression. Yet another approach stems out of research by James in 1890 on bodily sensations. Scherer (1999) has also described appraisal theories as a means of measuring emotions. Motivational aspects have furthermore formed the basis of the approach adopted by organisational behaviourists (Kanfer & Kantrowitz, 2002). Another approach is to be found in the evaluation of subjective experiences (Watson et al., 1988). Watson et al. (1988) devised the Positive Affect Negative Affect Scale, (PANAS), which is described as a self-report scale to assess two independent dimensions of positive and negative affect. To end with, emotions can be studied as a regulation issue (Gross, 1998; Levenson, 1999; Lazarus 1985). These approaches to studying emotions are clearly very different from one another as discussed below:

- **Emotions as facial expression**

Emotions are often described as the observed facial expressions that they convey. Ekman (1979) stated that a human face has a very complex structure, and that facial expressions can supplement self-evaluation text. People show a large variety of facial expressions, and not only the ones related to basic emotions. Sometimes, the exact *same* changes in facial

appearance that are related to an emotion can also complete other communicative functions (Ekman, 1979). Izard (1977) maintains that facial expressions have multiple functions that change ontogenetically.

Darwin (1872) believed that facial expressions are an innate and universal component of non-verbal communication. Ekman (1972) supports this view and has shown comparable patterns of production and recognition of emotional facial expressions across different cultures. During 1969, Ekman and his colleagues (Ekman, Sorenson, & Friesen, 1969) showed observers of different cultures pictures of many different facial expressions and asked them to judge which emotion was portrayed. If emotional expressions were universal, there would be high agreement within and across cultures in judgments. If emotional expressions were culture-specific, there might be agreement within a culture, but disagreement across cultures. The results revealed agreement both within and across cultures for six emotional expressions namely, anger, disgust, fear, happiness, sadness, and surprise. These data were the first systematic evidence for the universality of emotions and their expressions (Ekman et al., 1969).

Opinions in emotion research differ with reference to the universality of the interpretation of facial expressions. Some postulate that emotions are universally recognised from facial expression (Ekman, 1968). Others consider these facial expressions to be influenced by linguistics, and thus facial expressions would be as culturally variable as a language (Fridlund, 1994). According to Matsumoto (1996) and Russel and Fernandez-Dols (1997) some facial expressions are universal, and some facial expressions are culture-specific. Either way, people whose facial expressions are imitated feel that they are better understood and that their interaction is smoother (Chartrand & Bargh 1999). It would appear that the consensus of opinion is that facial expressions do reflect emotion states to a greater or lesser extent, and can play an important role in supplementing the information gleaned from other responses to emotion terms.

- **Emotion and vocal expression**

Another means of interpreting the experience of emotions is through vocal expression. According to Scherer emotions are associated with voice and speech behaviours and those

emotions may be recognised quite accurately from voice and speech samples (Scherer et al., 1986), despite the fact that the situations differ from country to country. For example, people in Spain and Israel tend to be "silent" during emotional situations compared to those in Great Britain and Germany, who opt for a verbal expression of emotion. In a study conducted by Scherer et al. (1986) laughing and crying were the most prominent of all non-verbal reactions reported and were characteristic of joy and sadness. Perhaps facial and vocal changes are more closely tied with what have been thought of as components of the emotion and thus only indirectly with emotion per se.

- **Emotion as bodily sensations**

In 1890 James made a very important statement that focuses on another aspect of interpreting the expression or experience of emotion. There are so many subtle bodily states and changes associated with emotion that the entire human organism may be called a sounding board. Every bodily change is allegedly perceived as soon as it occurs (James, 1884). One cannot abstract from an emotion all the feelings of its bodily symptoms and find anything left behind other than a cold and neutral state of intellect. James's theory was that bodily sensations occur prior to emotional feelings (James, 1884).

Izard (1992) expresses the basic idea of all psycho-evaluationary theories of emotion. Izard states that emotions are specific neuro-psychological phenomena shape by natural selection, that organise and motivate physiological, cognitive and action patterns that facilitate adaptive responses to the vast array of demands and opportunities in the environment. The key is that emotions are programmes that have arisen through the course of human evolutionary history to help organisms solve problems of adaptation and survival. Several emotion theorists expected specific neuro-physiological signatures for basic emotions to prepare the body for possible action and reaction. Kövecses (2000) stated that bodily symptoms must be seen in context with emotions to understand how and why they manifest. Emotions are considered to be culturally defined patterns of feelings and behaviours to be adopted by people when confronted with certain social circumstances. Thus, perceived bodily sensations, and even actual physiological manifestations, would simply be reactive, and follow from the specific cultural pattern adopted at a given moment (Kövecses, 2000).

- **Appraisal of emotion**

All emotion-response theories posit that emotion elicitation starts with an event. Scherer (1999) believes that emotions are elicited and differentiated on the basis of a person's subjective evaluation or appraisal of the personal significance of a situation, objective or event on a number of dimensions or criteria. This appraisal approach describes dimensions along which evaluations are made (e.g. the perception of things as harmful or beneficial). At the same time, the appraisal approach also describes the cognitive processes that underlie the application of these dimensional evaluations.

A number of appraisal theories of emotion, based on the revolutionary work of Magda Arnold (1960) and Richard Lazarus (1966) have been developed since the early 1980s. The basic principle of all of these theories is that people will interpret, evaluate or appraise an event with respect to a number of criteria or dimensions related to the significance of the event to them and their ability to cope with its consequences. Emotions are the result of one's reasoning of how one appraises events in one's life (Scherer, 2005). Appraisal links emotional responses to external circumstances and personal goals and beliefs (Smith & Lazarus, 1993). Smith and Kirby (2001) discuss two important requirements of any appraisal theory. Firstly, an appraisal theory should describe the dimensions along which they occur. Secondly, any appraisal theory must be able to describe the cognitive processes that underlie the application of these dimensional evaluations.

- **Motivational aspects of emotion**

Organisational behavioural researchers have determined that there is an important interplay between emotion and motivation (Kanfer & Kantrowitz, 2002). Emotions play an important role in motivating individuals, and also play an important part in the elicitation and expression of emotions. Recent research suggests that positive affect may increase motivation (Erez & Isen, 2002), and positive affectivity may, for example, have a positive impact on interview success (Caldwell & Burger, 1998). Frijda (1986, 2007) stated that emotions play an essential role in motivation and motivational processes also play an important role in the elicitation and expression of emotions. Motivational components are largely a consequence of action-tendencies tied to emotions, for example the desire to strike or to flee (Frijda, 1986, 1989).

- **Subjective experiences of emotion**

Everyday language suggests to us that the subjective experiences of emotions are rich with variety. It is therefore important to study which emotional information people are putting into their words, and how they understand the meaning of the words they use to describe their emotions. Watson et al. (1988) compiled the Positive Affect Negative Affect Scale, (PANAS), which is described as a self-report scale assessing three independent dimensions of positive and negative affect. These three independent dimensions are 1) the Valence-Arousal; 2) Tense-arousal; and 3) Energised arousal.

These activation dimensions are related to different causes. Firstly, for example, energetic arousal is influenced by a circadian rhythm (Schimmack, 1999; Thayer, 1989; Watson, Wiese, Vaidya, & Tellegen, 1999) that corresponds to activity in brain cells that regulate organisms' sleep–wake cycle (Tucker & Williamson, 1984). Tense arousal does not show a similar circadian rhythm. Secondly, the activation dimensions can change in opposite directions. For example, Gold, MacLeod, Deary, and Frier (1995) examined the influence of experimentally induced hypoglycemia on energetic arousal and tense arousal. Whereas energetic arousal decreased in response to low blood sugar levels, tense arousal increased, presumably as the result of an emergency response to mobilise the body to take action to restore blood sugar levels. Both valence focus and arousal focus can be defined as subjective experiences (Russell, 1989). Valence is a subjective feeling of pleasantness or unpleasantness; arousal is a subjective state of feeling activated or deactivated. Valence (from pleasant and unpleasant) and arousal (activated or deactivated) are the dimensions that many researchers who endorse the dimensional view of affect use (Lang, Bradley, & Cuthbert, 1990; Russell, 1978, 1980).

- **Regulation of emotion**

All of the above interpretive approaches are subject to regulation and control. Emotional regulation refers to the processes related to influencing emotions that are experienced, the situations under which they are experienced, and how and whether an individual expresses such emotions (Gross, 1999). Regulation also refers to a person's ability to understand and accept his or her emotional experience, to engage in healthy strategies to manage

uncomfortable emotions when necessary, and to engage in appropriate behaviour (e.g., attend classes, go to work, engage in social relationships) when distressed (Levenson, 1999).

People with good emotion regulation skills are able to control the urges to engage in impulsive behaviours, such as self-harm, reckless behaviour, or physical aggression, during emotional distress (Levenson, 1999). Emotion regulation processes may be used to make things either better or worse, depending on the context. Moreover, consistent with our functionalist orientation, regulatory strategies may help people achieve their own goals, but nonetheless be perceived by others as maladaptive, such as when children cry loudly in order to get attention (Lazarus, 1985).

The conclusion can be drawn that the study of emotion responses is most effective when one adopts a holistic approach. Emotion is not, for example, facial expressions, or bodily sensations, or vocal expressions in isolation. Rather, it is the sum of its parts. Emotion is the sum of the whole, i.e. the integration of these various approaches. The above approaches are not mutually exclusive, and the most valid and reliable interpretations and measurements of emotions will come from a combination of two or more of these approaches. The data inferred from one approach should be authenticated with the data attained from other approaches. Thus, making a composite of the approaches will provide a more accurate basis for comprehension and interpretation of emotion.

Furthermore it can be concluded that there is strong disagreement about the definition of emotions with respect to the meaning of emotion terms (Fehr et al., 1982; Scherer, 2005). There are immeasurably different phenomena that can be investigated under the umbrella of "emotion" and these phenomena are not necessarily interchangeable. If one is to develop a cumulative knowledge base about emotions, one needs a coherent theory of emotion that takes into consideration the meaning of emotion and the cultural nuances related to emotion terms. In this regard the componential emotion theory will be introduced next as a theory that refers to all the component of emotions. The componential emotion theory integrates existing approaches by recognising each approach as an integral part of the emotion concept and adding the notion of synchronising of the components in reaction to an event or situational antecedent that is relevant for one's goals, needs and values.

The componential emotion theory

Frijda (1986), Lang (1977), Lazarus (1991), Ortony and Turner (1990), and Scherer (1984) do not consider emotions any longer as unitary and elementary entities, but in its place, view emotions as multi-componential phenomena. It is essential that an emotion process consist of concurrent changes in several different components. The emotion process is defined as a complex of changes in different subsystems of the persons functioning. The emotion process includes the following components: a) antecedent event, b) emotional experiences, c) appraisal, d) physiological change, e) change in action readiness, f) behaviour, g) change in cognitive functioning and beliefs, and h) regulatory processes (Frijda, 1986; Lang, 1977; Lazarus, 1991; Ortony & Turner, 1990; Scherer, 1984).

The majority of emotions are involved in all of these components and they have a tendency to influence one another. Each component has its determinants, in addition to the episode of an emotionally changed event (Frijda, 1986). The different components also have a certain independence. The fundamental idea in the componential approach is that different emotion components do not automatically tag on from each other (Frijda, 1986; Scherer, 1984).

Scherer (2005) states that an emotion comprises several components, namely a motor expression component (facial and vocal expression), a neuro-physiological component (bodily systems), cognitive component (appraisal), a motivational component (action tendencies), the subjective component (emotional experience) and the regulation component (emotion regulation). The componential emotion approach suggests that emotion should be investigated with regard to situational circumstances as well as the synchronised activity it causes in each of the components of emotion (Fontaine, Poortinga, Setiadi, & Markham, 2002). If the emotion terms which one uses in daily language refer to emotion processes as described by the componential emotion theory across the world, then emotion words should at the same time refer to changes in appraisals, subjective experiences, action tendencies, expressive behaviour and bodily changes in each of the cultural groups (Scherer, 1997).

Different researchers have investigated different meanings and aspects of emotions. Emotional reactions are a result of how one assesses and appraises events and happenings in

one's life. Some research determines appraisals of objects and events and ties emotional responses to external circumstances and internal principles (Frijda, 1993). Schrerer & Wallbott (1994) investigated the meaning of emotions as emotional reactions to bodily sensations (such as shaking hands, trembling knees and sweaty hands). Frijda (2005) and Davidson (1994) investigate the meaning of emotion as patterned reactions inferred from behaviour or a sequence of behaviours.

Russell (1994) indicates that non-verbal expressions allow humans to convey their emotions via facial expressions and voluntary and involuntary vocal expressions such as crying and laughing (Russell, 1994). As Shaver (1997) found in his research, in order to function adaptively and appropriately, it is necessary to regulate our emotions and to modify reactions to respond to demands and experiences in an acceptable manner. The conclusion is that if the meaning of emotions is investigated, different emotions features must be included in the study of the meaning of emotions in order to fully understand emotions within a specific population from a theoretical point of view and through an empirical method.

The componential emotion approach describes emotions as fairly synchronised processes, consisting of relationships among various components, such as appraisals, psycho-physiological changes, expressive behaviours, action–tendency and subjective experiences that are elicited by specific and relevant situational antecedents (Frijda, 1986; Mesquita, Frijda, & Scherer, 1997). An aspect of the theory, the "emotion triad", proposed by Izard (1977), resides at the center of the model. It comprises subjective feelings, physiological activation, and motor expressions. This triad is connected to two other components, i.e., cognitive appraisals and behavioural tendencies. Any emotion is regarded as a specific pattern consisting of cognitive appraisals and the states of the other components (Scherer, 1997).

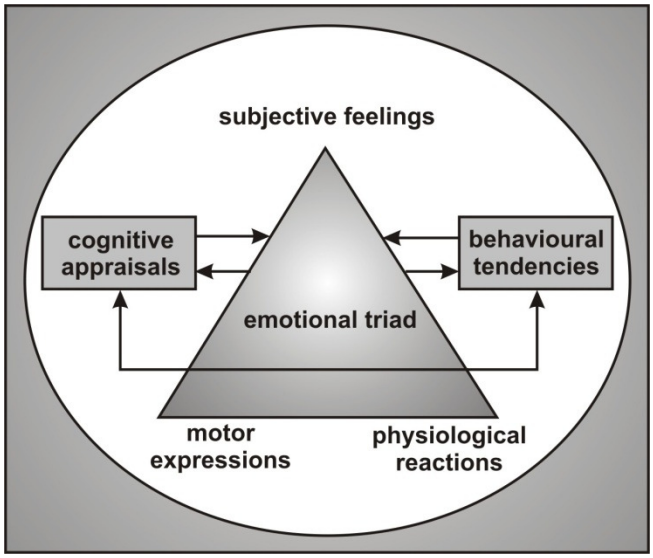


Figure 1: Scherer's Componential Emotion Approach

Finally, the componential emotion approach gives a whole new approach to the study of the meaning of emotion words. According to the componential emotion theory approach, emotion terms do not only refer to affective states, but they refer to the whole process of appraisals, subjective experiences, action tendencies, psycho-physiological changes, expressions and regulatory processes (Fontaine et al., 2007). With reference to these features, the componential emotion theory approach can be used in different cultural groups (Fontaine et al. 2007).

Cross-cultural views on emotions

For more than a century, psychologists have been trying to address issues of cross-cultural similarities and differences of emotions. This include reviews by Mesquita and Frijda (1992) and Mesquita et al. (1997), a meta-analysis by Van Hemert, Poortinga and Van de Vijver (2005), empirical studies of emotions by Scherer and Wallbott (1994) and report evidence for both principals of cross-cultural similarities and differences (Breugelmans, 2004). The debate is ongoing between universalism and relativism. On the one hand, universalism claims that emotions are similar across cultures, supported by researchers such as Elibl-Eibesfeldt (1980), Ekman (1992) and Scherer and Wallbott (1994). On the other hand, cultural

relativism believes all people are equal and cultural differences are due to the cultural context that influences an individual's development (Berry, Poortinga, Segall, & Dasen, 1992).

A typical universalistic approach to emotions can be found in the identification of facial expressions. According to this position, emotions are innate biological processes that are shared by the human species and in more of less resembling forms by the mammals (Morton, 1977; Scherer, 1985, 1991, 1994; Scherer & Kappas, 1988). According to the culture-specific approach emotions are culturally constructed phenomena, rather than biologically innate phenomena. Typical studies in this approach focus on emotion words that are salient and specific to a single cultural context, for instance the AMAE in Japan, or the LIGET among the Illongots. From this approach emotion processes are constructed within a specific cultural context and can only be interpreted within that cultural context.

Because emotions are culture-sensitive, McCarthy (1994) believes that emotions are constructed by cultural factors. Research indicates that emotions are biological, but also socio-cultural in nature. Kitayama and Markus (1994) and Mesquita and Frijda (1992) therefore focused on both these dimensions of emotions. This research is in stark contrast with the idea that emotions are basic, invariant states of the body that can be turned on and off (Mesquita, 2001) with no societal influences.

The conclusion can be drawn that according to some qualities, emotion experience may be culturally specific and therefore unfamiliar to other cultures, while other emotion experiences may be general to different cultures and thus better understood (Mesquita & Ellsworth, 2001). It can very well be that specific emotion terms differ between cultural groups, and that some terms are even specific to one cultural group, but this does not mean that the underlying emotional processes are culture-specific.

The componential emotion theory approach applied in cross-cultural issues

According to the componential emotion theory approach the components and the synchronisation between components as reaction to events is universal (Mesquita et al., 1997). Cultural differences, however, can emerge with respect to the cultural salience of each

component and the emotion terms that have been developed in language to refer to prototypical emotion processes. Mesquita et al. (1997) reported evidence of cross-cultural similarities and differences in each of the emotion components. Therefore, the componential emotion theory offers a framework from which the different components in specific cultural settings can be studied (Fontaine et al., 2007). This approach can also be used as a method to study emotions in different cultures (Mesquita et al., 1997).

According to research studies (Mesquita et al., 1997) some components of emotion that are universal across cultures include action readiness, specific emotional responses and emotion regulation such as response inhibition and expression control. Although responses may differ, there are certain universal issues or events that cause emotional concern across different cultures, such as loss or death of a loved one, rejection and rivalry or conflict (Mesquita et al., 1997). The conclusion can be drawn that similarities and differences in the meaning of emotions can be expected across cultural groups.

The multi-componential approach to emotion words opens the possibility of empirical research. Wierzbicka (1986, 1992, 1994) also presented analyses that make use of a set of semantic primitives, presumably occurring universally, to describe, as the componential approach, the meaning of emotion terms across languages. It compares emotion words by having subjects from different cultural groups describe the patterns of components of emotion incidents, for example, incidents of anger (Frijda, 1995; Mauro, Sato, & Tucker, 1992; Scherer & Walbott, 1994). The componential approach as well as Wierzbicks's analyses found that in addition to a shared core pattern of components, differences exist with regard to all components (Frijda, 1995; Mauro et al., 1992; Scherer & Walbott, 1994).

Studies by well-known researchers on emotions (Borod & Caron, 1980; Ekman, 1972; Ekman, 1987; Ekman & Friesen, 1969; Izard, 1971; McAndrew, 1986; Niit & Valsiner, 1977) involve observers of different cultures to moderate the facial expression of primary emotions, namely happiness, sadness, fear, anger, disgust, and surprise. Facial expressions of emotion do seem to be recognised pan-culturally in Western and non-Western cultures. Russell (2003), on the other hand, has argued that the recognition of facial expressions of emotion depends to a large extent on the sender's and receiver's language and culture

(Elfenbein & Ambady, 2002). Reviewing the cross-cultural evidence for the recognition of facial expression of emotions, Russell (1994) therefore commented that "facial expressions and emotion labels are probably associated, but the association may vary with cultures and is loose enough to be consistent with various alternative accounts" (Russell, 1994). These two extreme views rarely acknowledge the fact that biological and social signals may be accommodated in an opposite but complementary manner in facial emotion research. One of the key issues of current debate in the psychology of emotion concerns the universality versus cultural relativity of emotional expression. This has important implications for the central question of the nature and function of emotion. There is now a general consensus that both biological and cultural factors contribute to the emotion process (Mesquita et al., 1997).

The universality view argues that facial expressions of emotion are uniformly understood, expressed or experienced across cultures (Ekman, 1992). Averill (1992) and Ortony and Turner (1990) put the argument forward that despite universality, cultural relativism plays a major role in the understanding and expression of facial emotion and that emotion expressions are a natural outgrowth of cultural learning. Their argument is grounded in ecological demand, ethnic variation, and social construction of the self and cultural practices.

Cross-cultural similarity was found in the action readiness patterns from the emotion studied (Scherer & Wallbott, 1994) and there is no evidence that action readiness is not universal (Frijda, 1986). Russell (1991) says that there is huge similarity in emotion categories across different cultures and languages. Differences in action readiness have been found (Frijda, Markham, Sato & Wiers, 1995). Changes in action readiness in responses to different types of situations were examined in a study comparing Dutch, Surinamese and Turkish people living in the Netherlands. Significant group differences emerged (Frijda et al., 1995).

What is important about this debate on the similarities and differences in cross-cultural psychology is that one cannot simply assume that theories and assessment instruments assess emotions from the West (mostly Anglo-Saxon countries) and will necessarily generalise to other cultural groups. It has to be demonstrated rather than be assumed a priori. From this approach emotion processes are constructed within a specific cultural context and can only be

interpreted within that cultural context. Based on the componential emotion theory, the componential emotion approach can be applied to study emotions in specific cultures.

The study of meaning of emotion through a componential emotion theory approach lens

Most research in the past on the meaning of emotion has focused on negative and positive affectivity (Judge et al., 2001; Zautra et al., 2005) as well as two-dimensional models of emotion (valence/arousal) of emotion (Feldman Barrett & Fossum, 2001). However, Fontaine et al. (2007) introduced an approach that studies the meaning of emotion in the context of 144 emotion features using a componential emotion theory approach. Fontaine et al. (2007) argue in this groundbreaking research that was published in *Psychological Science* that two-dimensional models of emotions are not sufficient to study the meaning of emotions (see Appendix A).

The componential emotion theory approach was followed as method by Fontaine et al. (2007) in a student population study of three language groups, namely Dutch-, English- and French-speaking people to investigate the meaning of emotion structures in these languages groups. According to Fontaine et al. (2007) this approach allows for an empirical and theoretical method to study the meaning of emotions across cultures.

In 2005, Scherer originally constructed a new instrument in English, named the Meaning Grid instrument. This is a web-based questionnaire composed of 24 emotion terms and 144 emotion features. The 24 emotion terms are prototypical emotion terms used regularly in both emotion research and daily language. These 24 emotion terms also made a consistent appearance in cross-cultural free-listing and prototypicality-rating tasks, and are frequently mentioned in the self-reports from a large-scale Swiss household study of people's descriptions of an emotional situation they experienced the previous day (Scherer, Wranik, Sangsue, Tran, & Scherer, 2004).

The 144 emotion features were derived from a broad range of very diverse emotion theories and literature, such as the appraisal theory of Scherer (2001), the psycho-physiological emotion literature (Stemmler, 2003), the action-tendency theory of Frijda (Frijda, Kuipers, &

Ter Schure, 1989), the current-affect theory of Russell (Yik, Russell, & Feldman-Barrett, 1999) and the expression-regulation theory of Ekman and Friesen (1969). The 144 emotion features manifest activity in each of six emotion components: 31 features refer to appraisals, 18 to bodily experiences, 9 to facial expression, 12 to vocal expression, 5 to gestural expression, 40 to action tendencies, 22 to subjective feelings and 4 to regulation. The additional 3 features are representative of other qualities, such as their frequency of occurrence and their levels of social acceptance. The English Meaning Grid instrument was translated into French and Dutch by means of the translation/back-translation procedure. For the present study the same approach was adopted for use in Afrikaans.

In the study of Fontaine et al. (2007) a Principal Component Analysis (PCA) was employed to find the dimensions of greatest variance in the data set. PCAs were compiled within and across the three languages used in the study (Dutch, English and French), treating the 24 emotion terms as observations and the average scores of the 144 emotion features as variables. The results of this study indicated a four-dimensional model of emotion, more than the two dimensions to which research normally refers (valence and arousal). In order of importance, the results of Fontaine et al. (2007) indicated dimensions as evaluation pleasantness, potency-control, activation-arousal and unpredictability. These four dimensions accounted for 75,4% of the total variance. After varimax rotation, the first dimension (evaluation-pleasantness) accounted for 35,3% of the variance, the second dimension (potency-control) for 22,8%, the third dimension (activation-arousal) for 11,4%, and the last dimension (unpredictability) for 6,0%. These results were consistently replicated in each of the three language culture samples studied. The dimensions labeled in this study were described accordingly by the researches:

The *first dimension* was interpreted as an evaluation-pleasantness dimension. This dimension is characterised by appraisals of intrinsic pleasantness and goal conduciveness, as well as action tendencies of approach versus avoidance. The *second dimension* was characterised by appraisals of control, leading to feelings of power or weakness, interpersonal dominance or submission and includes impulses to act or refrain from action. It also determines changes in the rate and volume of speech as well as parasympathetic symptoms. On this dimension, emotions such as pride, anger, and contempt are opposed to shame, submissiveness and

passivity. This dimension could therefore be interpreted in terms of potency-control. The *third dimension* found was an activation-arousal dimension. It is characterised by sympathetic arousal, such as rapid heartbeat and readiness for action. It opposes emotions such as stress, anger, and anxiety with relaxation, complacency contentment, and calm. The *fourth dimension* is characterised by appraisals of novelty and unpredictability (with accompanying behaviours such as jaw dropping, eyebrow raising, and spontaneous exclamations), as compared with appraisals of expectedness or familiarity. Surprise is distinguished from all other emotions on this dimension.

The results of a multiple-dimensional structure found in the study of Fontaine et al. (2007) is in sharp contrast with two-dimensional models that have been in the past always been deemed to be appropriate for studying questions relating to emotions. However, researchers should seriously consider whether such two-dimensional models are sufficient for their particular questions. For many clinical and applied studies, it is crucial to distinguish between similar emotions such as fear or anger, and two-dimensional models do not capture this distinction, which can be more adequately studied with the four-dimensional emotion model promulgated by Fontaine et al. (2007). Two-dimensional models further only represent sympathetic forms of activation. Even for those researchers who are interested only in evaluation and activation, the four-dimensional model allows for better control of unintended variation on the two other emotion dimensions. The question can now be asked what the meaning structure for the white Afrikaans language group as a cultural group will reveal when a componential emotion approach will be applied.

The study of Afrikaans emotion terms through a componential lens

In the late 19th century, Afrikaans was considered a Dutch dialect, recognised as a distinct language and gaining equal status with Dutch and English as an official language in South Africa in terms of Act 8 of 1925. Although Dutch remained an official language, the new constitution in 1961 finally declared Afrikaans and English to be the two official languages. Afrikaans is the only Indo-European language of significance that underwent distinct development on the African continent (Giliomee, 2003).

Although the history of Afrikaans has its roots in seventeenth century Dutch, it has been influenced by many languages, including English, Malay, German, Portuguese, French and some African languages. Some of the first written work in Afrikaans used the Arabic alphabet in the work *Bayaan-ud-djyn* written by Abu Bakr. Despite its development and minor writings in the so-called Cape Dutch, Afrikaans was mainly the spoken language for people living in the Cape, while Dutch was used as the formal and written language. The first complete translation of the Bible into Afrikaans was made in 1933 (Giliomee, 2003).

Afrikaans is mainly spoken in South Africa and Namibia, with smaller numbers of speakers in Botswana, Angola, Swaziland, Zimbabwe, Togo and Zambia. Due to emigration and migrant labour, there are possibly over 100,000 Afrikaans speakers in the United Kingdom, with other substantial communities found in Brussels, Amsterdam, Perth (Australia), Toronto and Auckland. It is the primary language used by two related ethnic groups in South Africa, the Afrikaners and Coloureds, also referred to as *kleurlinge* or *bruinmense* (the latter including Basters, Cape Malays and Griqua) (Giliomee, 2003).

Davis (1975) noted that religion plays an important part in the lives of most Afrikaners. The Afrikaners are considered to be 100% evangelised and 99% are cultural Christians. Almost 50% of these are considered Evangelical. Many are devout members of the Dutch Reformed Church. The Dutch Reformed Church's life and social attitudes have been deeply aligned with the tenacious culture. This has compromised its relations with other church bodies and for some years the South African church was excluded from the world Reformed Church fellowship (Davis, 1975; du Preez, 1974).

Geographically, Afrikaans is the majority language of the Western region (one-third of South Africa known as the Northern and Western Cape) and spoken at home by 69% and 58% South Africans respectively. It is also the largest first language in the adjacent southern third of Namibia (Hardap and Karas, where it is the first language of 44% and 40% people respectively). It is the most widely used second language throughout both of these countries for the population as a whole, although the younger generation has better proficiency in English (Giliomee, 2003). Varieties of the Afrikaner language are the Eastern Cape Afrikaans

(Oosgrens-Afrikaans, which became Standard Afrikaans), Cape Afrikaans (Kaapse Afrikaans) and Orange River Afrikaans (Oranjerivier-Afrikaans) (Giliomee, 2003).

From the literature review the conclusion can be drawn that the influence of culture is also seen in the experience and expression of emotions. Culture provides an important explanation for different patterns of emotional expression. The componential emotion theory approach can be used to study the meaning of emotion in the context of emotion features. Understanding the similarities and differences in the way different cultures experience emotions will contribute towards the way that they interact with one another.

Research Objective and Hypotheses

The general research objective of this research study was to determine the meaning of emotion in the white Afrikaans-speaking working adult group in South Africa by determining the emotion dimensions as featured by the componential emotion theory approach.

This leads to the formulation of the following research hypotheses:

H_1: *The emotion terms featured in the Meaning Grid will be reliable and will denote satisfactory alpha coefficients when measured against results of previous Meaning Grid Studies: 0,80 and higher.*

H_{2a}: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the evaluation-pleasantness dimension.*

H_{2b}: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the power-control dimension.*

H_{2c}: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the activation/arousal dimension.*

H_{2d}: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the unpredictability dimension.*

The potential value-adding of this study

The potential value-adding of this study to the world of Industrial Psychology will be to investigate the meaning of emotion in a sample of white Afrikaans-speaking working adults in South Africa in the context of emotion features. By making use of the componential emotion theory approach (emotion dimension structure), it will ultimately provide a broader perspective on the meaning of emotion than the two-dimensional emotion models that are found in literature.

What will follow?

In order to understand the above, the research study will flow into a specific division. Firstly, the method explains the research design, the procedure, participants of this study, the measurement instrument that was used and the statistical analyses. Secondly, the results of the reliability of the Meaning Grid instrument will be reported, namely the principal component loadings of the 144 items of the Meaning Grid instrument and the factors scores of the 24 Meaning Grid emotions terms. Thirdly, the discussion will conclude the results obrained in this research article.

METHOD

Research design and procedure

A survey design was used to achieve the research objectives (Kepple, Saufley, & Tokunaga, 1992). The survey design is suitable for the descriptive function as relationships between variables are examined (Shaughnessy & Zachmeister, 1997). The survey design has the advantage of obtaining a substantial amount of information. The advantage of utilising a survey design is that it is economical and the research information can be regarded as accurate (within sampling error). Disadvantages of this design include that it is time- and energy-consuming (Kerlinger & Howard, 2000).

The procedure of this research was a translation process (translation and back-translation) into Afrikaans for use in this language group. The Afrikaans version of the Meaning Grid was then administered in a controlled environment in the Eastern Cape, Free State and Gauteng provinces of South Africa. Each participant was given four emotions randomly chosen from the set of 24, and asked to rate each one in terms of the 144 emotions features. Using a 9-point scale [ranging from "extremely unlikely" (1) to "extremely likely" (9)], they were asked to rate the likelihood that each of the 144 emotion features could be inferred when a person from their culture group (Afrikaans-speaking South Africans) uses the emotion term to describe an emotional experience. Each of the 144 emotion features was presented on a separate sheet, and participants rated all four emotion term for that feature before proceeding to the next feature. Ethical clearance for conducting this research study was obtained from an ethical approval committee in the research institution. Confidentiality and anonymity were obtained and ensured.

Participants

In total, 120 white Afrikaans-speaking working adults participated in this study. The minimum educational level for inclusion participation was Grade 12. Participants were white Afrikaans-speakers in the Eastern Cape, Free State and Gauteng provinces. The sample was a convenience sample and Table 1 presents some of the characteristics of the participants.

Table 1

Characteristics of the participants (N=120)

Item	Category	Frequency	Percentage (%)
Ethnicity	White	120	100
Gender	Male	32	27
	Female	88	73
Age	18-27	18	15
	28-37	44	37
	38-47	35	29
	48+	23	19
Province	Eastern Cape	100	83
	Gauteng	12	10
	Free State	8	7
Language	Afrikaans	120	100

Highest Qualification	Grade 12	67	56
	One/two year diploma	16	13
	Three/four year diploma	21	18
	Post-graduate	16	13

In total, 120 white Afrikaans-speaking working adults participated in this study. The participants completed the Meaning Grid instrument in their own language. The ethnicity of the group was white participants. In terms of gender, woman outnumbered men by two to one. The majority (37%) were between 28 and 37 years old. The largest part of the overall participants was from the Eastern Cape Province (83%). More than half (56%) of the participants had a Grade 12 qualification, while 44% of the participants' had other tertiary levels of education (between a one year diploma and post-graduate qualifications).

Measurement instrument

The Meaning Grid instrument consists of a paper and pencil questionnaire of 24 emotion terms and 144 emotion features and was translated into Afrikaans for this present study. The 24 emotion terms (*being hurt, sadness, shame, guilt, compassion, disappointment, love, contentment, happiness, pride, pleasure, joy, interest, surprise, despair, stress, anxiety, fear, jealousy, hate, irritation, anger, disgust* and *contempt*) are prototypical emotion terms frequently used in both emotion research and daily language. This representative set was chosen on the basis of frequent use in the emotion literature, consistent appearance in cross-cultural free-listing and prototypicality-rating tasks, and frequent mention in the self-reports from a large-scale Swiss household study of people's descriptions of an emotional situation they experienced the previous day (Scherer et al., 2004).

The 144 emotion features operationalise activity in each of the six emotion components: 31 features refer to appraisals, 18 to bodily experiences, 22 to subjective feelings, 9 to facial expression, 12 to vocal expression, 5 to gestural expression, 40 to action tendencies, 3 to regulation and 3 representing other qualities, such as frequency and social acceptance. They were derived from a broad range of very diverse emotion theories, such as the appraisal theory of Scherer (2001), the psycho-physiological emotion literature (Stemmler, 2003), the action tendency theory of Frijda (Frijda et al., 1989), the current affect theory Russell (Yik et al., 1999), and the expression regulation theory of Ekman and Friesen (1969).

Statistical analyses

Making use of the SPSS program (Statistical Package for the Social Sciences software program) (SPSS, 2003), Principal Component Analysis (PCA) was executed to computer the factor structure as well as alpha Cronbach's values to determine the reliability of the rating of each of the emotion terms. The component loadings of the emotion terms on the determined factors was further investigated and also presented as scatter plots. PCA is a form of factor analysis. There are 24 emotion terms in the analysis; the variation in the 144 emotion features could be perfectly represented by a solution with 24 components. In this regard Fontaine et al. (2007) state that the matrix is not positive definite (the rank is only 24, not 144). They furthermore argue that factor analyses (exploratory or confirmatory) that assume underlying factors cannot be used with these data, as these techniques require a positive definite matrix. Furthermore, there are no latent traits in the determination of the emotion dimensions. The argument is formed that it makes sense to see whether a matrix of rank 24 can be further reduced to an even smaller number of components without losing much information. In lexical personality research analysing a matrix with more variables than observations is not uncommon. In that area of research, as applied to the meaning of emotion in the Afrikaans-speaking group, the study aims to replicate the four emotion dimensions.

RESULTS

Table 2

Reliability table of the results of the Meaning Grid instrument

Emotion Term	Cronbach's alpha with all respondents	Number of respondents	Cronbach's alpha with respondents with item-total correlations of at least ,20	Number of respondents with item-total correlations of at least ,20
being hurt (seergemaak wees)	**0,89**	20	0,89	20
sadness (hartseer)	0,81	20	**0,84**	17
shame (skaam)	0,83	20	**0,85**	16
guilt (skuldig)	0,77	19	**0,83**	11
compassion (medelye)	0,77	20	**0,79**	15

disappointment (teleurstelling)	0,82	20	**0,86**	15
love (liefde)	0,88	20	**0,89**	16
contentment (tevredenheid)	0,81	20	**0,86**	17
happiness (blydskap)	0,90	20	**0,91**	18
pride (trots)	0,64	19	**0,79**	11
pleasure (plesier)	0,91	20	**0,94**	15
joy (vreugde)	0,89	20	**0,91**	17
interest (belangstelling)	0,78	20	**0,82**	16
surprise (verbaas)	0,83	20	**0,84**	16
despair (wanhoop)	0,86	20	**0,88**	17
stress (stres)	0,89	20	**0,92**	16
anxiety (angstig)	0,87	20	**0,88**	18
fear (bang)	0,90	20	**0,91**	18
jealousy (jaloers)	0,56	20	**0,80**	10
hate (haat)	0,89	20	**0,90**	16
irritation (irritasie)	0,87	20	**0,89**	20
anger (kwaad)	0,90	19	**0,91**	20
disgust (afkeur)	0,85	14	**0,95**	20
contempt (minagting)	**0,74**	11	0,74	11

Inspection of Table 2 shows that acceptable Cronbach's alpha coefficients were obtained for the majority of the emotion terms. Cronbach alpha's ranged from the lowest values (0,74 – 0,79) for emotion terms. According to the reliability table (Table 2), the following emotion terms were the highest: disgust (afkeur) 0,95; pleasure (plesier) 0,94; stress (stres) 0,92; happiness (blydskap) 0,91; joy (vreugde) 0,91; fear (bang) 0,91; anger (angstig) 0,91; hate (haat) 0,90. The emotion terms that scored the lowest with the Meaning Grid instrument were compassion (medelye) 0,79; pride (trots) 0,79; contempt (minagting) 0,74. Out of the 24 emotion terms of the Meaning Grid instrument, 8 emotion terms were above 0,90 and 13 were between 0,80 and 0,89. Only 3 emotion terms were between 0,74 and 0,79 [compassion (medelye), pride (trots) and contempt (minagting)]. Most alpha coefficients were higher than the guideline of $\alpha > 0,70$ (Nunnally & Bernstein, 1994). It therefore appears that the majority of the Meaning Grid emotion terms instrument has acceptable levels of internal consistency for the white Afrikaans-speaking working adult language group in South Africa. Twenty one (21) of the emotion terms had a reliability with 0,80 and only three below 0,80.

Therefore: *H_1: The emotion terms featured in the Meaning Grid will be reliable and will denote satisfactory alpha coefficients when measured against results of previous Meaning Grid Studies: 0,80 and higher* can be partially accepted.

Next, the results of principal component analysis will be reported. The principal component analysis was used as method to reduce and determine the number of emotion dimensions.

4.1 Factorial structure

Fontaine et al. (2007) applied the Meaning Grid instrument to three different European languages (English, French, and Dutch). Four dimensions were identified in this study: the first dimension being *pleasantness*, the second being *power,* the third being *activation,* and also a fourth dimension which is *unpredictability.* Against this theoretical point of view it was first decided to extract a four-factor solution. Results of the scree plot (Figure 2) also indicated that a four-factor solution should be extracted. However, the fourth dimension was not interpretable and so it was decided to extract only three dimensions which were interpretable.

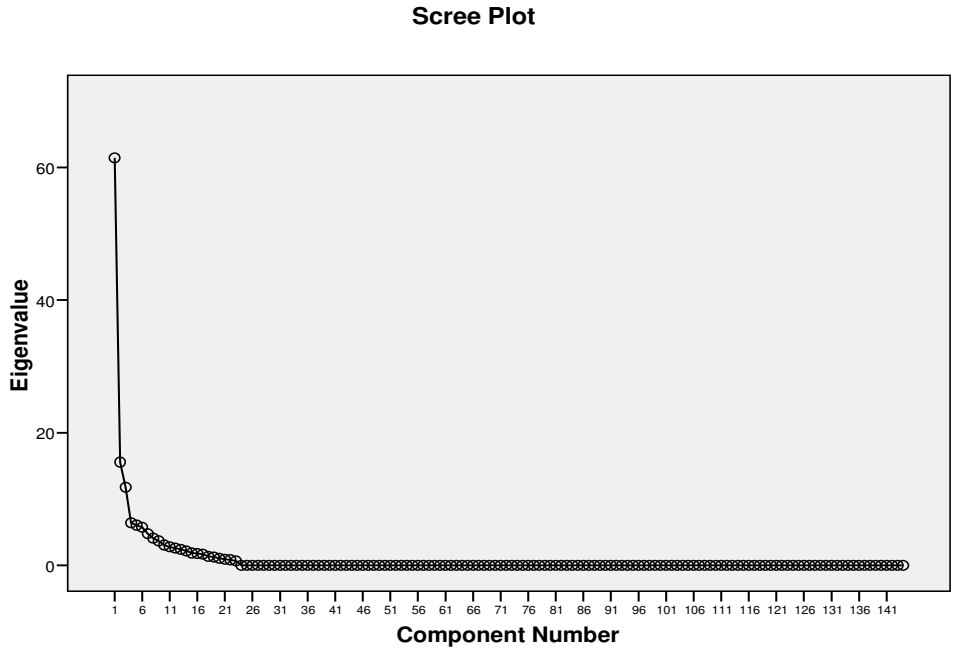


Figure 2: Scree plot of the principal component analysis.

4.1.1 Factor loadings of the features

Table 3 presents a principal component analysis that indicates which of the 144 features loads onto which factors. The interpretation of the factors as emotion dimensions are based on their relationship with the 144 emotion features and on the coordinates of the 24 emotion terms on these factors. Factor analysis PCA was applied.

Table 3

Principal Component loadings of the 144 items of the Meaning Grid instrument

	Emotion Features	**Emotion Component**	**Factors Loadings**		
			1	**2**	**3**
	Features on the three components		**Evaluation:** (Pleasant vs Unpleasant)	**Arousal/Unpredictability:** (High vs Low / Unpredictability)	**Power:** (Weakness vs Dominance)
58	wanted the ongoing situation to last or be repeated	action	**-0,97**	0,03	-0,13
63	wanted to sing and dance	action	**-0,97**	-0,14	-0,08
59	felt good	feelings	**-0,97**	-0,03	-0,09
55	felt at ease	feelings	**-0,97**	-0,01	-0,07
64	in itself pleasant for the person	appraisal	**-0,97**	0,05	0,04
61	smiled	face	**-0,97**	-0,02	-0,05
57	felt positive	feelings	**-0,96**	-0,05	-0,12
102	felt energetic	feelings	**-0,95**	-0,13	-0,20
41	felt in control	feelings	**-0,94**	0,09	-0,26
50	felt calm	feelings	**-0,94**	0,11	-0,18
60	consequences positive for person	appraisal	**-0,94**	0,02	-0,13
18	wanted to keep or push things away	action	**0,93**	0,06	-0,12
17	felt inhibited or blocked	action	**0,93**	0,11	-0,07

62	wanted to be tender, sweet, and kind	action	**-0,92**	-0,03	0,20
52	wanted to get totally absorbed in the situation	action	**-0,92**	-0,09	-0,12
140	consequences positive for somebody else	appraisal	**-0,91**	0,01	-0,21
10	felt negative	feelings	**0,91**	0,20	0,06
19	in itself unpleasant for somebody else	appraisal	**0,91**	0,06	0,14
104	felt strong	feelings	**-0,90**	0,05	-0,30
99	felt alert	feelings	**-0,90**	-0,10	-0,11
44	important and relevant for person's goals	appraisal	**-0,90**	0,02	-0,06
8	consequences negative for person	appraisal	**0,90**	0,13	0,14
16	felt bad	feelings	**0,88**	0,07	0,34
101	felt powerful	feelings	**-0,88**	0,30	-0,27
45	in itself pleasant for somebody else	appraisal	**-0,88**	0,01	-0,23
25	felt out of control	feelings	**0,88**	-0,24	0,10
15	wanted to prevent or stop sensory contact	action	**0,87**	0,30	0,08
43	important and relevant for goals of somebody else	appraisal	**-0,87**	0,18	-0,06
26	felt powerless	feeling	**0,87**	0,01	0,25
3	wanted to destroy whatever was close	action	**0,87**	0,11	-0,35
80	wanted to flee	action	**0,86**	-0,09	0,30
51	wanted to comply to someone else's wishes	action	**-0,86**	0,05	0,05
54	muscles relaxing	body	**-0,86**	-0,17	0,03
11	wanted to break contact with others	action	**0,86**	0,30	-0,05
9	treated unjustly	appraisal	**0,86**	0,07	-0,01
24	wanted to run away in whatever direction	action	**0,86**	0,07	0,39
7	wanted to oppose	action	**0,86**	0,16	-0,28
73	wanted to withdraw into her/himself	action	**0,85**	0,10	0,26
53	social acceptability of the emotion	other	**-0,85**	0,06	0,21
12	violated laws or socially accepted norms	appraisal	**0,84**	-0,04	0,08
21	withdrew from people or things	gesture	**0,84**	0,19	0,20
117	felt restless	feelings	**0,84**	0,02	-0,02

56	wanted to be near or close to people or things	action	**-0,83**	-0,09	0,39
13	felt the urge to stop what he or she was doing	action	**0,83**	0,18	0,11
2	pressed lips together	face	**0,83**	-0,16	-0,23
76	wanted to disappear or hide from others	action	**0,82**	-0,09	0,32
14	wanted to undo what was happening	action	**0,82**	0,01	0,19
65	wanted to submit to the situation as it is	action	**-0,82**	0,13	-0,14
49	wanted to go on with what he or she was doing	action	**-0,81**	0,28	-0,29
5	in itself unpleasant for somebody else	appraisal	**0,80**	0,20	0,16
81	got pale	body	**0,79**	-0,38	0,29
4	frowned	face	**0,78**	0,01	-0,45
6	wanted to do damage, hit, or say something that hurts	action	**0,77**	0,23	-0,45
108	felt dominant	feelings	**-0,77**	0,20	-0,48
29	muscles tensing (whole body)	body	**0,76**	-0,52	-0,09
28	in danger	appraisal	**0,74**	-0,14	0,12
113	sweated	body	**0,73**	-0,40	0,09
88	had stomach troubles	body	**0,73**	-0,26	0,35
90	lacked the motivation to pay attention to what was going on	action	**0,72**	0,01	0,12
22	irrevocable loss	appraisal	**0,71**	0,06	0,23
20	consequences negative for somebody else	appraisal	**0,71**	0,38	0,07
31	felt exhausted	feelings	**0,71**	0,11	0,25
114	perspired, or had moist hands	body	**0,69**	-0,48	0,05
83	wanted to be hurt as little as possible	action	**0,68**	0,19	0,37
103	wanted to be seen, to be in the centre of attention	action	**-0,68**	0,24	-0,55
42	event with consequences the person was able to live with	appraisal	**-0,67**	-0,05	0,19
96	showed the emotion to others more than she felt it	regulation	**-0,67**	0,32	-0,25
85	felt tired	feelings	**0,66**	0,25	0,17

86	had a trembling voice	voice	**0,66**	-0,29	0,37
98	wanted to show off	action	**-0,65**	0,21	-0,50
71	felt weak	feelings	**0,65**	-0,07	0,56
46	person was at the centre of attention	appraisal	**-0,62**	-0,11	-0,25
1	incongruent with own standards and ideals	appraisal	**0,62**	-0,07	-0,12
131	Felt breathing slowing down	body	**-0,62**	-0,10	0,23
91	will be changed in a lasting way	other	**-0,61**	0,44	0,17
92	wanted to act, whatever action it might be	action	**0,60**	0,03	-0,57
69	fell silent	voice	**0,60**	0,33	0,42
95	moved toward people or things	gesture	**-0,59**	-,046	-0,11
75	wanted to do nothing	action	**0,59**	0,25	0,28
47	wanted to take care of another person or cause	action	**-0,58**	0,15	0,40
123	produced speech disturbances	voice	**0,57**	-0,52	0,02
68	felt weak limbs	body	**0,57**	-0,41	0,42
143	person had enough resources to avoid or modify consequences of the event	appraisal	**-0,56**	0,05	0,24
74	lacked the motivation to do anything	action	**0,56**	0,51	-0,03
77	wanted someone to be there to provide help or support	action	**0,55**	-0,11	0,39
120	blushed	body	**-0,55**	-0,38	0,06
40	familiar event	appraisal	**-0,54**	0,20	0,12
84	felt cold	body	**0,53**	-0,34	0,22
37	caused by a supernatural power	appraisal	**-0,51**	-0,21	0,16
106	wanted to tackle the situation	action	**0,51**	0,18	-0,07
112	felt hot	body	**0,50**	-0,35	-0,04
38	felt an urge to be attentive to what is going on	action	**-0,47**	0,08	-0,39
121	felt nervous	feelings	**0,46**	-0,20	0,36
118	was in an intense emotional state	feelings	**0,43**	-0,16	0,23
119	felt shivers	body	**0,42**	-0,33	0,27
30	tried to control the intensity of the emotional feeling	regulation	**0,38**	0,32	0,03

141	caused by the person's own behaviour	appraisal	**-0,38**	0,12	0,20
39	confirmed expectations	appraisal	**-0,32**	0,21	-0,26
142	consequences predictable	appraisal	**-0,31**	-0,04	-0,02
35	inconsistent with expectations	appraisal	**0,30**	0,05	0,19
116	produced abrupt body movements	gesture	-0,18	**-0,87**	-0,11
111	felt breathing getting faster	body	0,36	**-0,81**	-0,00
124	opened her or his eyes widely	face	-0,39	**-0,77**	-0,17
110	felt heartbeat getting faster	body	-0,05	**-0,76**	-0,16
33	hid the emotion from others by smiling	regulation	0,09	**0,76**	0,27
139	caused by chance	appraisal	-0,20	**-0,71**	0,14
115	spoke faster	voice	0,01	**-0,71**	-0,57
138	event occurred suddenly	appraisal	-0,15	**-0,67**	0,28
130	did not show any changes in gestures	gesture	0,00	**0,66**	-0,06
129	did not show any changes in vocal expression	voice	-0,08	**0,66**	-0,16
122	felt warm	body	-0,02	**-0,63**	-0,19
136	unpredictable event	appraisal	0,02	**-0,63**	0,37
27	wanted to be in control of the situation	action	-0,01	**0,62**	-0,45
133	had no bodily symptoms at all	body	-0,23	**0,59**	-0,24
79	spoke slower	voice	0,16	**0,59**	0,41
128	did not show any changes in face	face	-0,07	**0,57**	-0,34
89	showed the emotion to other less than she felt it	regulation	0,06	**0,57**	-0,15
134	had the jaw drop	face	-0,46	**-0,47**	-0,13
107	wanted to take initiative her/himself	action	-0,42	**0,43**	-0,37
137	produced a short utterance	voice	0,42	**0,42**	0,35
125	required an immediate response	appraisal	-0,13	**-,040**	0,20
36	frequency of experience in the cultural group	other	-0,22	**0,37**	0,01
100	felt an urge to be active, to do something, anything	action	-0,21	**0,37**	-0,05
144	experienced the emotional state for a long time	feelings	0,35	**0,37**	0,24

126	wanted to overcome an obstacle	action	0,25	**0,36**	0,01
67	wanted to hand over the initiative to someone else	action	-0,14	**0,25**	0,03
105	increased the volume of voice	voice	0,14	-0,37	**-0,82**
109	had an assertive voice	voice	0,30	0,21	**-0,76**
94	produced a long utterance	voice	-0,41	-0,08	**-0,75**
87	showed tears	face	0,07	-0,47	**0,73**
127	changed the melody of her or his speech	voice	-0,31	0,02	**-0,61**
34	wanted to be in command of others	action	0,24	0,46	**-0,60**
82	had a feeling of a lump in throat	body	0,10	-0,07	**0,59**
70	felt submissive	feelings	0,35	0,36	**0,56**
66	decreased the volume of voice	voice	-0,09	0,50	**0,53**
135	had eyebrows go up	face	-0,13	0,01	**-0,53**
78	closed her or his eyes	face	0,30	-0,03	**0,48**
132	felt heartbeat slowing down	body	-0,37	0,13	**0,44**
72	wanted to make up for what she or he had done	action	-0,03	0,05	**0,44**
93	wanted to move	action	0,13	0,27	**0,41**
23	moved against people or things	gesture	0,22	0,27	**-0,38**
48	consequences positive for somebody else	appraisal	-0,17	-0,35	**-0,37**
97	caused intentionally	appraisal	0,11	0,05	**-0,31**
32	consequences avoidable or modifiable	appraisal	0,15	0,04	**0,31**

The first factor was labelled *Evaluation* which explained 43,0% of the variance, the second factor was labelled *Arousal/Unpredictability* as it was a combination of Arousal and Unpredictability and explained 11,0% of the variance and the third factor was labelled *Power* which explained 8,2% of the variance.

A closer inspection of the factor scores of the 24 emotion terms on these factors are presented in Table 4.

Table 4

Factors scores of the 24 Meaning Grid emotions

Emotion Terms	Components		
	1	2	3
	Evaluation: (Pleasant vs Unpleasant)	**Arousal/Unpredictability:** (High vs Low / Unpredictability)	**Power:** (Weakness vs Dominance)
love (liefde)	-1,31	-0,12	1,00
contentment (tevredenheid)	-1,32	1,00	0,30
happiness (blydskap)	-1,56	-0,60	-0,50
pleasure (plesier)	-2,20	-1,00	-0,50
joy (vreugde)	-1,64	-0,34	-1,00
interest (belangstelling)	-1,10	0,42	-0,14
stress (stres)	1,00	-1,00	1,00
anxiety (angstig)	1,00	-1,00	0,30
hate (haat)	1,00	0,20	-0,90
disgust (afkeur)	1,00	0,20	0,13
surprise (verbaas)	-0,63	-2,10	-0,20
despair (wanhoop)	0,70	1,00	1,00
anxiety (angstig)	1,00	-1,00	0,30
fear (bang)	1,00	-1,01	0,05
contempt (minagting)	0,40	2,02	-1,10
being hurt (seergemaak wees)	0,66	0,11	0,80
sadness (hartseer)	1,19	0,45	1,85
shame (skaam)	0,12	0,11	1,12
guilt (skuldig)	0,73	-0,10	1,06
compassion (medelye)	-0,24	1,11	1,01
disappointment (teleurstelling)	0,60	0,10	0,84
pride (trots)	-0,22	2,41	-1,66
despair (wanhoop)	0,70	1,00	1,00
stress (stres)	1,00	-1,00	1,00
jealousy (jaloers)	1,00	-1,00	-2,00
irritation (irritasie)	0,70	-0,11	-0,92
anger (kwaad)	0,93	-0,05	-1,75

Factor scores of the 24 emotion terms can be graphically represented as indicated in the following scatter plots:

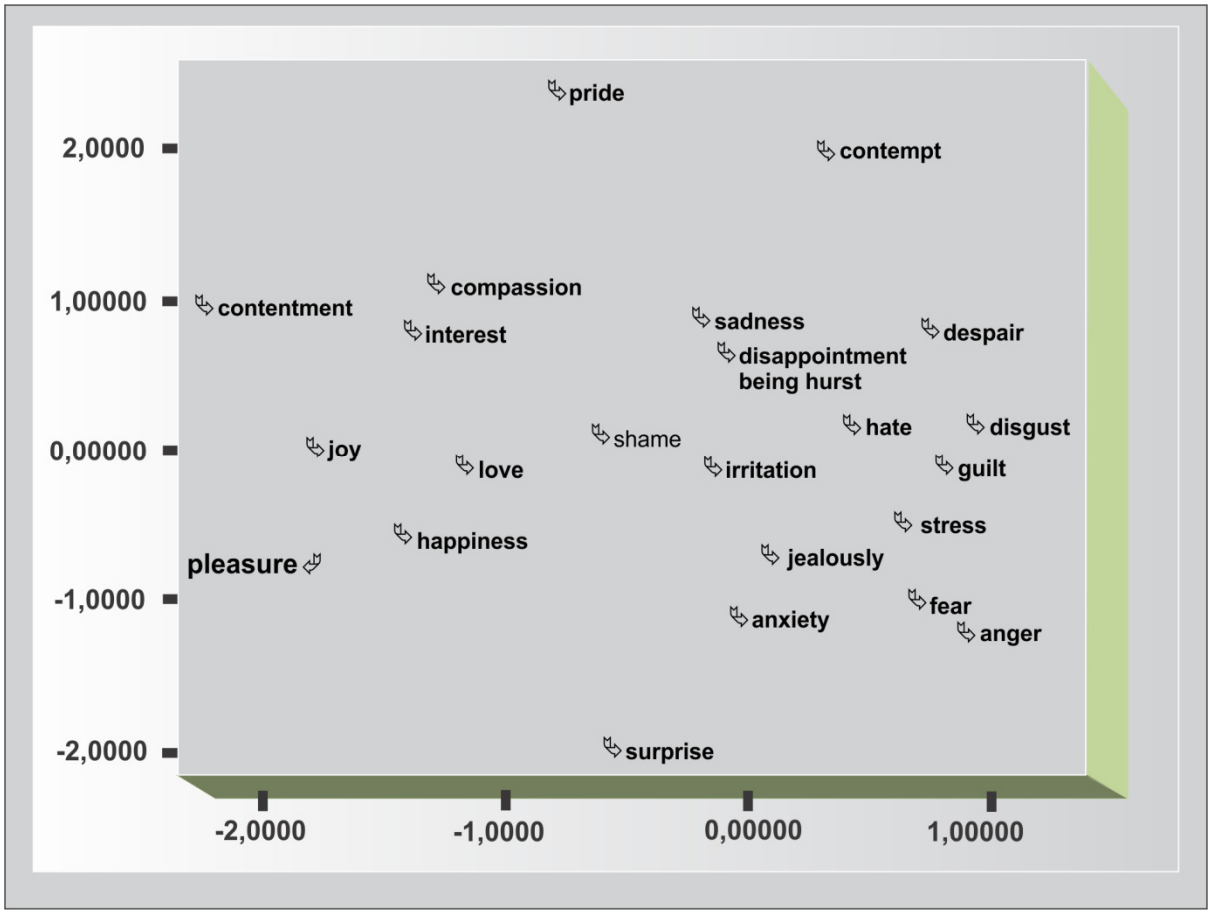


Figure 3(a): The three-dimensional scatter plot representing the 24 emotion terms of the Meaning Grid. Plot of coordinates for power: weakness vs. dominant emotions, evaluation: pleasant vs. unpleasant emotions.

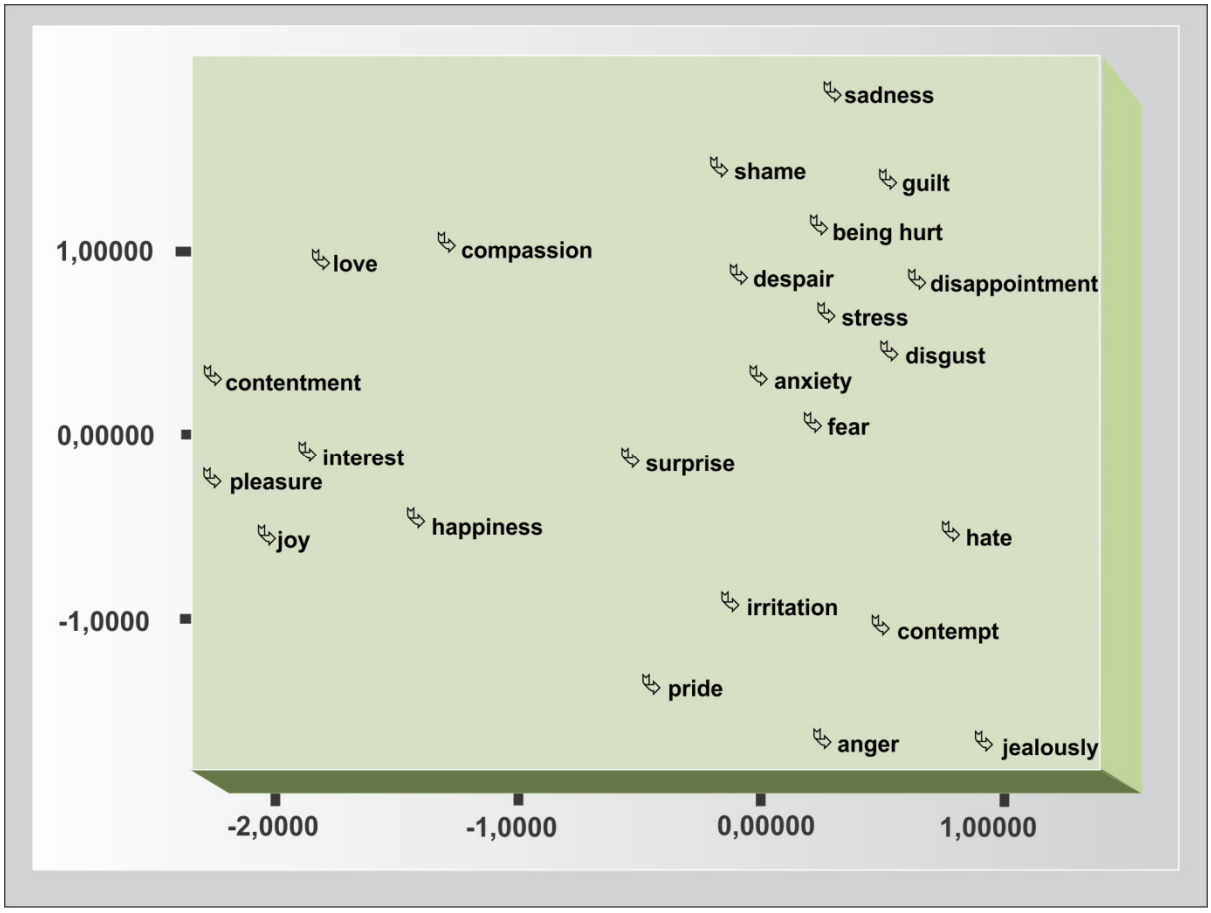


Figure 3(b): The three-dimensional scatter plot representing the 24 emotion terms of the Meaning Grid. Plots of coordinates for high arousal vs. low arousal evaluation: pleasant vs. unpleasant emotions

Table 3 indicates a three-factor solution that explained 62,2 % of the total variance. The first factor was labelled *evaluation-pleasantness* and explained 43,0% of the variance, the second factor was labelled *arousal/unpredictability* as it was a combination of arousal and unpredictability and explained 11,0% of the variance, and the third factor was labelled *power-control* and explained 8,2% of the variance.

The first factor according to Table 3 that emerged was an evaluation dimension. This dimension evaluates the pleasantness versus the unpleasantness of an emotion. This dimension is characterised by intrinsic appraisals of pleasantness and goal conduciveness and action tendencies of approach versus avoidance (Fontaine et al., 2007). Examples of emotion features on this dimension included *wanted the ongoing situation to last or be repeated*

(action); wanted to sing and *dance (action), felt good (feelings), smiled (face) and in itself pleasant for the person (appraisal).* On closer inspection of the loadings of emotion terms on this factor as can be seen in Table 4 and Figure 3(a), examples of items in this dimension include unpleasant emotions such as being hurt, sadness, shame, guilt, and disappointment, versus pleasant emotions such as love, contentment and happiness. H_{2a} can thus be accepted: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the evaluation-pleasantness dimension.*

The second factor that emerged was an arousal/unpredictability dimension. This means that the two dimensions collapsed into one factor. According to Fontaine et al. (2007) this arousal and surprise dimension is characterised by sympathetic arousal e.g. rapid heartbeat and readiness for action. Examples of emotion features on this dimension included *produced abrupt body movements (gesture), felt breathing getting faster (body), opened her or his eyes widely (face), caused by chance (appraisal)* and *did not show any changes in vocal expression (voice).* On closer inspection of the loadings of emotion terms on this factor as can be seen in Table 4 and Figure 3(b), examples of items in this dimension include high arousal emotions such as hate, irritation, anger and jealousy versus low arousal emotions such as sadness, shame, being hurt and despair. Therefore both H_{2c} and H_{2d} can be accepted: *$H_{2c:}$ The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample includes the activation/arousal dimension* and H_{2d}: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample includes the unpredictability dimension.*

The third factor which emerged was a power dimension. This dimension is characterised by appraisals of control, how powerful or weak a person feels when a particular emotion is experienced. This includes feelings of dominance or submission, the impulse to act or withdraw and changes in speech and parasymphatic symptoms (Fontaine et al., 2007). Examples of emotion features on this dimension included *increased the volume of voice (voice), showed tears (face), wanted to be in command of others (action), produced a long utterance (voice)* and *felt heartbeat slowing down (body).* On closer inspection of the

loadings of emotion terms on this factor as can be seen in Table 4 and Figure 3(a), examples of items in this dimension include emotions of weakness such as sadness, disappointment, being hurt, shame and guilt versus dominance emotions such as hate irritation, anger, disgust and fear. Therefore, H_{2b} can be accepted: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the power-control dimension.*

DISCUSSION

A similarity rating task's results (research article 3) revealed a three-dimensional cognitive emotion structure in the white Afrikaans-speaking adult group namely *evaluation, power and arousal*. This cognitive structure was more comprehensive than the two-dimensional emotion structures of pleasantness and arousal found in literature (Feldman Barrett & Russell, 1998; Russell & Barrett, 1999; Feldman Barrett & Fossum, 2001). Using a componential emotion theory approach, Fontaine et al. (2007), determined a four-factor emotion dimension structure with respect to the meaning of emotion terms, namely evaluation–pleasantness, power-control, activation-arousal and unpredictability, in Dutch-, English- and French-speaking student sample groups. Therefore, the importance of the current study was to determine the meaning of emotion (emotion dimension structure), in the context of emotion features (according to the componential emotion theory approach).

The theoretical approach used to study the meaning of emotion terms is the componential emotion theory approach. Emotion is not only composed of 1) facial expressions, or 2) vocal expressions or 3) bodily sensations, or 4) appraisal, or 5) motivation, or 6) subjective experiences or 7) regulation in isolation. Rather, these together are the sum of the meaning of emotions - the building blocks of emotions. Mesquita et al. (1997) say in this regard that while an emotion term (even when it has been judged as translation-equivalent) can be characterised by a highly specific pattern of characteristics, the most basic assumption of the componential emotion theory is that the characteristics themselves can be organised in terms of appraisals, subjective experiences, action tendencies, expressions and bodily changes.

The general research objective of this research study was to determine the meaning of emotion in the white Afrikaans-speaking working adult group in South Africa by determining the emotion dimensions as represented by the componential emotion theory approach.

The results of this study indicated a three-factorial solution representing four emotion dimensions as the emotion structure in Afrikaans. This emotion structure was established in the context of 144 emotion features, by making use of a theoretical component approach. The Meaning Grid was found, compared to the four-factorial solution of Fontaine et al. (2007), to have all four emotion dimensions replicated. Thus, the same dimensions that were found in student samples in English, French, and Dutch were also found in Afrikaans working adults. This means that the emotion structure found in this study is more than a linguistic or cultural phenomenon. However, the fact that arousal and unpredictability formed one factor is noteworthy for researchers interested in Afrikaans emotions. Next, each research hypothesis will be discussed.

H_1: The emotion terms featured in the Meaning Grid will be reliable and will denote satisfactory alpha coefficients when measured against results of previous Meaning Grid Studies: 0,80 and higher can be partially accepted.

The results indicated that H_1 was partially accepted. The reliability of this study was indicative of satisfactory alpha coefficients. Cronbach alpha coefficients that were the highest were disgust (afkeur) 0,95; pleasure (plesier) 0,94; stress (stres) 0,92; happiness (blydskap) 0,91; joy (vreugde) 0,91; fear (bang) 0,91; anger (angstig) 0,91; and hate (haat) 0,90. The terms with the lowest alpha coefficients were compassion (medelye) 0,79; pride(trots) 0,79 and contempt (minagting) 0,74. Out of the 24 terms of the Meaning Grid instrument, 8 terms were above 0,90, 13 were between 0,80 and 0,89. Only 3 terms were between 0,74 and 0,79. Although some terms were lower than the ones reported in Fontaine et al. (2007), in the present study in South Africa, only three terms, namely compassion (medelye) with 0,7; pride (trots) with 0,79 and contempt (minagting) with 0,74 were above 0,80.

With the reliabilities of the study in Geneva, the terms with the lowest alpha coefficients were contempt, disgust and compassion with 0,87 and in the study of Belfast/York compassion

was the lowest alpha coefficient with 0,88. Cronbach alpha coefficients that were the highest of the study in Gent were anger (0,97), joy (0,97), happiness (0,98), pleasure (0,98) and contentment (0,98). Those in the Geneva study were anger (0,96), anxiety (0,96), joy (0,97), pleasure (0,96), pride (0,96) and shame (0,96), while the highest recorded in the Belfast/York study were happiness (0,97), pleasure (0,97), disgust (0,96), stress (0,96), despair (0,96), joy (0,96), contentment (0,96) and being hurt (0,96). In all four studies, the emotion term *pleasure (plesier)* was ranked high (South Africa: 0,94; Gent: 0,98; Geneva: 0,96 and Belfast/York: 0,97).

The terms with alpha coefficients lower than 0,80 were compassion (medelye) 0,79; pride (trots) 0,79 and contempt (minagting) 0,74. A possible explanation may be that these emotion terms are not prototypical in Afrikaans. Based on this results of $H_{1,}$ the conclusion can be drawn that the Meaning Grid proved to be reliable and that although the alpha coefficients were not consistently as high as those found in international studies (Fontaine et al., 2007), it was still satisfactory.

H_{2a}: The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the evaluation-pleasantness dimension.

H_{2a} accepted as the meaning of emotion was inclusive of the evaluation-pleasantness dimension. The first factor according to Table 3 that emerged was an evaluation dimension and it explained 43,0% of the variance. This dimension evaluates the pleasantness versus the unpleasantness of an emotion and is characterised by intrinsic appraisals of pleasantness and goal conduciveness and action tendencies of approach versus avoidance (Fontaine et al., 2007*).* Examples of emotion features on this dimension included *wanted the ongoing situation to last or to be repeated (emotion component: action); wanted to sing and dance (emotion component; action)* and *felt good (emotion component: feelings).* A further investigation on the component loading on this factor indicated unpleasant emotions such as *being hurt, sadness, shame, guilt,* and *disappointment*, versus pleasant emotions such as *love, contentment* and *happiness.*

The first emerging factor, the *evaluation-pleasantness dimension*, was also identified by Fontaine et al. (2007). This dimension is the systematic acquisition and assessment of information to provide useful feedback about some object. Barrett (1998) defined the evaluation-pleasantness dimension as pleasantness or hedonic value. Research using the dimension perspective has generated interesting results and enables a variety of measurement techniques to be utilised to gather detailed data using both self-report and observation measures. For example, language itself and specifically language used to describe emotion can be characterised in terms of evaluation (Russell, 1991; Wierzbicka, 1992).

Subjective well-being increases with the frequency of pleasant emotions and decreases with the frequency of unpleasant emotions. As a result, frequency judgments of emotions are important indicators of subjective well-being (Diener, 1984; Diener, Sandvik, & Pavot, 1991; Diener, Smith, & Fujita, 1995). Culture also influences the relation between pleasant and unpleasant emotions (Bagozzi, Wong, & Yi, 1999; Heine, Lehman, Markus, & Kitayama, 1999). Bagozzi et al. (1999) stated that in Western cultures pleasant and unpleasant emotions ‘‘are conceived as oppositional categories. One is either happy or sad but not both’’ (Bagozzi et al., 1999). Furthermore, in the Western cultures, women’s emotion reports should produce more negative correlations than men’s emotion reports. In Asian cultures, women’s emotion reports should produce less negative correlations than men’s emotion reports. The data of Bagozzi et al. (1999) supported this predicted interaction between culture and gender.

H_{2b}: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the power-control dimension.*

H_{2b} was accepted as the meaning of emotion and was inclusive of the power-control dimension. The third factor which emerged was the power dimension and it explained 8,2% of the variance. This dimension is characterised by appraisals of control and how powerful or weak a person feels when a particular emotion is experienced. This includes feelings of dominance or submission, the impulse to act or withdraw and changes in speech and parasymphatic symptoms (Fontaine et al., 2007). Examples of emotion features on this dimension included *increased the volume of voice (emotion component: voice), showed tears*

(emotion component: face) and *had a feeling of a lump in throat (emotion component: body).* A further investigation on the component loading on this factor includes emotions of weakness such as sadness, disappointment, being hurt, shame and guilt versus dominance emotions such as hate, irritation, anger, disgust and fear.

This second factor which emerged was the *power-control dimension* that was also identified by Fontaine et al. (2007). This power dimension relates to the degree of power or sense of control over the affect, and helps distinguish emotions initiated by the subject from those elicited by the environment, e.g. contempt versus fear; this has also been called the strength, dominance, confidence, or control dimension (Osgood, Suci, & Tannenbaum, 1957; Russell & Mehrabian, 1974). Russell (1980) stated that the power dimension refers to the degree of power or sense of control over the emotion. Therefore, the power dimensions of any emotion can help one to recognise and adapt to emotionally-driven urges and impulses. This dimension may be seen as a dimension that involves cognitive appraisal of an individual's coping potential, or power, in a particular situation, and it has been variably referred to as potency, dominance, or control (Lazarus & Smith, 1988). According to Smith and Ellsworth (1985) it has been suggested that this is an important dimension for the differentiation of negative emotions.

The power-control dimension has been popular since Osgood et al. (1957) research work on the general analysis of affective structure in the meaning of lexical items. In particular, it is an extremely useful way to distinguish the emotions of fear and anger. The power dimension is defined and distinguished from mere intensity of feeling. A 'powerful' emotion can be easily misconstrued as merely a 'strong' emotion, rather than an emotion of strength (Russell and Mehrabian, 1974).

H_{2c}: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample includes the activation/arousal dimension*

H_{2d}: *The meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample includes the unpredictability dimension.*

The finding of four dimensions (inclusive of unpredictability) is a positive result that concurs with the four-factor emotion dimension structure of Fontaine et al. (2007) found in international studies. Both H_{2c} and H_{2d} were accepted as the meaning of emotion and included the activation/arousal as well as the unpredictability dimension. The second factor that emerged was an arousal/unpredictability dimension and it explained 11,0% of the variance. This means that the second factor comprised both arousal and unpredictability. According to Fontaine et al. (2007) this arousal and unpredictability dimension is characterised by sympathetic arousal, e.g. rapid heartbeat and readiness for action. Examples of emotion features on this dimension included *produced abrupt body movements (emotion component: gesture), felt breathing getting faster (emotion component: body)* and *opened her or his eyes widely (emotion component: face).* A further investigation on the component loading on this factor includes high arousal emotions such as hate, irritation, anger and jealousy versus low arousal emotions such as sadness, shame, being hurt and despair.

The arousal part of the third emotion factor, according to the principal component analysis, is indicative of sympathetic arousal, such as rapid heartbeat and readiness for action. It opposes emotions such as stress, anger, and anxiety to disappointment, contentment, and compassion (Fontaine et al., 2007). Arousal is defined as bodily activation (Barrett, 1998) and also as the level of alertness or activation on a continuum ranging from extreme wakefulness to extreme drowsiness (Duffy, 1962; Humphreys & Revelle, 1984). Arousal is held to be a complex rather than a unitary process which may require multiple physiological measures (Olson & Ray, 1985). In contrast to this concept stressing the physiological differentiation of emotion, other authors have developed a "general arousal" conception of emotion. Cannon (1927), the forerunner of this concept, proposed that the various emotions share a common set of well-delineated changes in the peripheral autonomic system. This state of general arousal, present in every emotional state, would prepare the organism to perform very quickly the energy consuming efforts involved in adaptative actions like fight or flight. Many later authors adopted a similar perspective (Duffy, 1951; Hebb, 1949; Lindsley, 1951; Schlosberg, 1954).

This other part of the third factor is characterised by appraisals of novelty and unpredictability (with behaviours such as jaw dropping and eyebrow rising), as compared with appraisals of expectedness or familiarity. Surprise is distinguished from all other emotions on this dimension (Fontaine et al. 2007). The best interpretation of this dimension seems to be the sense in which the event that triggered the emotion was predictable or not. For instance, the predictability of someone's insulting behaviour makes one sad. However, it is more central to the experience of this emotion to focus on the insulting behaviour itself. And in general the trigger (predictable or not) of an emotion need not be its focus.

Scherer (2003) stated that although unpredictability has not emerged in most previous general studies of the dimensions of emotion, uncertainty is an important dimension in many appraisal theories (Ellsworth & Scherer, 2003), and unexpectedness in the form of interruption was central to Mandler's (1975) model. The unpredictability dimension monitors the input information for the amount of unexpected changes or the discrepancy between the expected and the observed. However, meaningful differentiations emerge among these other emotions as well; for example, fear is distinguished from stress and disgust from contempt (Fontaine et al., 2007).

It may transpire that the reason why arousal and unpredictability loaded onto one dimension was because there is a possible relationship between unpredictability and a fear connotation; it may also be that the sample does not relate well to unexpected changes and this causes arousal. The hypothesis can be made that there is a discrepancy between what is expected and what is observed, causing a state of unpredictability. The study of Fontaine et al. (2007) was carried out with student participants while the participants in this study were working adults.

What is of importance is the fact that these two emotion dimensions collapsed into one factor and this phenomenon can be studied on its own. The findings of such a study will give further insight of the meaning of emotion in white Afrikaans-speaking working adults.

Conclusions and recommendations (implications for practice):

The results confirm that within the white Afrikaans-speaking working adult group, a three-dimensional emotion structure, made up of evaluation, arousal/unpredictability and power,

exists. Although four emotion dimensions were present in this study, arousal and unpredictability merged into one dimension, hence the three-dimensional emotion structure being identified. By applying the Meaning Grid instrument in this research, it conformed with international settings, where Fontaine et al. (2007) applied the Meaning Grid instrument to three different European languages (English, French and Dutch).

A theoretical and empirical approach (componential emotion theory) was used to measure the meaning of emotion in the group researched. Emotions affect different people in different ways and emotions experienced in the workplace have either a positive or negative influence on one's personal life away from the workplace. Published literature that present the meaning of emotion and introduces the emerging integrative framework called the componential emotion theory, provides a broad understanding of the different views that exist with regard to emotions (Fontaine et al., 2007).

It is recommended that further studies be conducted, firstly to investigate the correlation between unpredictability and the fear factor associated with Afrikaans policemen and -women within the white population of South Africa. Secondly, the meaning of emotions in the other cultures in South Africa should also be researched. Thirdly, future research should be expanded to include all provinces in South Africa.

Limitations:

Comprehending the instructions proved difficult for some participants; particularly in as far as the format of the questionnaire was concerned. This was evident from the questions participants asked during the questionnaire-completion phase, as well as in post-completion interviews.

Some respondents indicated that the instructions of the questionnaire were time-consuming and complained that the questionnaire itself was too long. They became tired and distracted during the completion process bringing into question the reliability and consistency or relevance of their responses in the early part of the questionnaire with their responses towards the end. The group represented a wide range of age groups, as opposed to Fontaine et al.

(2007) who tested exclusively among student population groups, a fact that needs to be taken into consideration when comparisons of the two studies are made.

Suggestions for future research:

The population of South Africa consists of a conglomerate of people from all cultures and races. The economic and cultural dynamics in each province of South Africa vary as do the nature and environment of individual workplaces; nevertheless each workplace, environment and location does have an impact on emotions experienced. It would be interesting to determine if similarities and differences exist between Afrikaans-speaking people in the different provinces and the findings of this study should be compared with research on other culture groups, as it will assist the understanding of the meaning of emotions within culture groups.

The two-dimension structure is not comprehensive enough for the purpose of studying emotions in Afrikaans-speaking people; therefore a three-dimension emotion structure is required. According to the componential emotion theory approach, the 144 emotion features are very important building blocks when studying the meaning of emotion. Consequently, one wants to know if the meaning structure of emotions is evident in the context of the work environment. To add value to the world of Industrial Psychology, the meaning of emotions in emotion episodes in the workplace needs to be measured. Therefore, this will be the aim of the subsequent research article.

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CHAPTER 5

Research Article 4

EMOTION EPISODES OF WHITE AFRIKAANS-SPEAKING WORKING ADULTS IN THE WORKPLACE

ABSTRACT

Orientation

Self-report measuring instruments in the workplace focus on the measurement of two-emotion dimensional models, namely valence and arousal. However, researchers argue for an investigation of a multi-componential emotion model. Furthermore, emotions must be investigated in the natural contexts in which they occur. It therefore becomes crucial to study emotion dimensions and episodes in the workplace.

Research purpose

The purpose of this research was to investigate whether a multiple-dimensional emotion model can describe emotion experiences in the workplace when measured against emotion features, and secondly to investigate emotion episodes that employees report.

Motivation for the study

To date, no study has been done to determine the meaning and content of emotion episodes among the white Afrikaans-speaking working adults in South Africa. Researchers claim that a two-dimensional structure is presently the most widely utilised structure at hand. The existing self-report measuring instruments in the workplace focus on the measurement of a two-emotion dimensional model, namely valence and arousal. Yet other researchers argue for an investigation of a multi-componential emotion model in the work context. Researchers also argue for research on emotions in the natural settings in which they occur – the workplace.

Research design, approach and method

A survey design was used to report on the two intense emotion experiences at work (in total 358 episodes). Employees rated their emotion experiences on features based on the componential emotion theory. The participants of the emotion episodes (N=179) study consisted of native white Afrikaans-speaking working adults. The sample consisted of participants from the white ethnicity group speaking Afrikaans within the Eastern Cape, Free State and North-West provinces and use was made of an availability sample.

Main findings

The results confirm that the four factors of pleasantness, power, arousal and unpredictability, in that order of importance, are essential to satisfactorily determine the emotion experience and meaning of emotion terms. A three-dimensional structure (*evaluation, arousal* and *power*) were identified within a white Afrikaans-speaking working adult group. The main emotion episodes reported on with satisfying content included goal achievement, receiving recognition and personal incidents. Emotion episodes with less satisfying content included categories such as behaviour of work collegues, acts of boss/superior/management and task requirements.

Practical/managerial implications

Emotion measurements in the workplace should include assessments also based on power and arousal and not only on valence (evaluation). The currently positive and negative emotion measurements are thus not sufficient. Wellness and motivation, job satisfaction and organisation commitment efforts in the workplace should take notice of the reported emotion episodes of employees.

Contribution/value-adding

This study added value to the field of Industrial Psychology by providing the meaning and content of emotions in the workplace against emotion features of a multiple componential model. These results of a study conducted in a white Afrikaans-speaking working adult population in South Africa can be used as a reference for other emotion research constructs.

OPSOMMING

Oriëntasie

Selfrapportering-meetinstrumente in die werksplek fokus op die meting van twee-emosie dimensionele modelle, naamlik valensie en stimulasie. Navorsers pleit egter vir 'n ondersoek na multi-komponensiële emosiemodelle. Daarby moet emosies ondersoek word in die natuurlike kontekste waarin hulle voorkom. Dit is daarom uiters belangrik om emosiedimensies en -episodes in die werksplek te bestudeer.

Navorsingsdoelstelling

Die doel van hierdie navorsing was om vas te stel of 'n multidimensionele emosiemodel emosiebelewenisse in die werksplek kan beskryf as dit gemeet word aan emosiekenmerke, en tweedens om emosie-episodes wat deur werkers vermeld word, te ondersoek.

Motivering vir die studie

Tot op hede is geen studie gedoen om die betekenis en inhoud van emosie-episodes onder wit Afrikaanssprekende werkende volwassenes in Suid-Afrika te bepaal nie. Navorsers beweer dat 'n tweedimensionele struktuur tans die mees algemeen gebruikte struktuur is wat beskikbaar is. Die bestaande selfrapportering-meetinstrumente in die werksplek fokus op die meting van 'n twee-emosie dimensionele model, naamlik valensie en stimulasie. Ander navorsers pleit vir 'n ondersoek na 'n multikomponensiële emosiemodel in die werkskonteks. Navorsers pleit ook vir navorsing oor emosies binne die natuurlike situasie waarin dit voorkom – die werksplek.

Navorsingsontwerp, -benadering en –metode

'n Opname-ontwerp is gebruik om verslag te doen oor die twee intense emosiebelewenisse by die werk (altesaam 358 episodes). Werkers het hulle emosiebelewenisse geskaal volgens kenmerke wat op die komponensiële emosieteorie gebaseer is. Die deelnemers (*N*=179) aan die studie oor emosie-episodes was wit Afrikaanssprekende werkende volwassenes. Die steekproefgroep het bestaan uit die wit Afrikaanssprekende volksgroep in die Oos-Kaap, die Vrystaat en die Noorwes-Provinsie, en daar is gebruik gemaak van 'n beskikbaarheidsteekproef.

Hoofbevindinge

Die resultate bevestig dat die vier faktore van aangenaamheid, mag, stimulasie en onvoorspelbaarheid, in daardie volgorde van belangrikheid, noodsaaklik is om die emosiebelewenis en die betekenis van emosieterme bevredigend te bepaal. 'n Driedimensionele struktuur (*evaluasie*, *aktivering* en *mag*) is binne 'n groep wit Afrikaanssprekende werkende volwassenes bepaal. Die belangrikste emosie-episodes wat met ’n tevrede inhoud gerapporteer is, het doelbereiking, die ontvangs van erkenning en persoonlike insidente ingesluit. Emosie-

episodes met ’n minder tevrede inhoud het kategorieë soos die gedrag van kollegas, die optredes van hoofde/oorgeskiktes/bestuur en taakvereistes ingesluit.

Praktiese en bestuursimplikasies

Emosiemetings in die werskplek behoort ook assesserings gebaseer op mag en op stimulasie in te sluit en nie net op valensie (evaluasie) nie. Die huidige positiewe en negatiewe emosiemetings is dus nie voldoende nie. Pogings in die werksplek tot welsyn en motivering, werksbevrediging en organisasiebetrokkenheid moet kennis neem van die emosie-episodes van werkers wat vermeld word.

Bydrae/Waardetoevoeging

Hierdie studie het waarde toegevoeg tot die studieveld van die Bedryfsielkunde deur die betekenis en inhoud van emosies in die werksplek teenoor die emosiekenmerke van 'n multi-komponensiële model. Hierdie resultate van 'n studie onder 'n wit Afrikaanssprekende volwasse werkersgroep in Suid-Afrika kan as verwysing gebruik word vir ander emosienavorsing-konstrukte.

INTRODUCTION

Key focus of this study

One third of the majority of a working adult's life is spent in the workplace. Therefore, workers bring all of themselves to work, including their traits, moods and emotions. Their affective experiences and expressions influence others and their overall disposition have an impact on job performance, decision making, creativity, turnover, teamwork, negotiations and leadership (Gibson, 2006; Hill, 1992; Yukl, 1997). Emotion episodes at work, i.e. feelings of frustration with non-performing colleagues and anger about irate customers and unsympathetic managers are all contributing factors that cause emotion in the workplace. These factors have an influence on how employees are feeling both physically and emotionally. (Dasborough, 2006; Gibson, 2006; Lord & Kanfer, 2002). Researchers therefore increasingy focus their attention on emotion research in work settings (Ashkanasy, Härtel, & Zerbe, 2000; Brief & Weiss, 2002).

Research, for example, report on positive emotion reactions that have been linked to numerous desirable outcomes in the workplace. These outcomes include increased productivity, job satisfaction and empowerment, decreased employee stress and increased company turnover (Barsade, Brief, & Spataro, 2003). Equally, negative emotion reactions have been shown to predict a wide array of undesirable outcomes such as tension, decreased productivity and turnover, and even workplace violence (Bagozzi, 2003). Researchers have argued in the past decade that it becomes necessary to investigate emotions at work (emotion episodes experienced by employees) as part of the study of organisational behaviour (Ashforth & Humphrey, 1995; Muchinsky, 2000).

Ashkanasy et al. (2000), Fineman (2000) and Fisher and Ashkanasy (2000) began to direct much more attention to work-related emotion. In the research domain dealing with organisational behaviour and emotion at work, the four individual areas of research to date have been firstly the expression, exploitation, and management of emotions (e.g. Morris & Feldman, 1996; Rafaeli & Sutton, 1990), secondly the effects of emotional intelligence on individual and organisational performance (e.g. Goleman, 1998; Goleman, Boyatzis, & McKee, 2002), thirdly the effects of trait affectivity or affective disposition on individual performance (e.g. Cropanzano, James, & Konovsky, 1993; Staw & Barsade, 1993) and

fourthly the antecedents and consequences of momentary affective experience (moods and emotions) in organisations (e.g. Fisher, 2000; George & Brief, 1996; Isen & Baron, 1991; Weiss & Cropanzano, 1996).

Ashkanasy et al. (2000), Fisher and Ashkanasy (2000), and Weiss, (2001) recognise the relevance of understanding emotions at work. Fisher (2000), and Weiss and Cropazano (1996) began to reshape the domain of job satisfaction with the recognition of the emotion content attached to it. Basic research on affect and emotions has also been used as a foundation for new perspectives on established topics, such as leadership (Fitness, 2000; Glomb & Hulin, 1997; Lewis, 2000) or group processes (George, 1990). There are many advantages to taking a broad perspective when trying to understand emotions and organisational outcomes (Lord & Kanfer, 2002; Rosenberg & Fredrickson, 1998). Apart from this, Gooty, Gavin and Ashkanasy (2009) call for emotion researchers to investigate emotions in the natural contexts in which they occur – making an investigation into the emotion episodes in the workplace an important research topic.

It therefore becomes crucial to measure emotions in the workplace, and emotion episodes in the workplace must be investigated (Gibson, 2006; Payne & Cooper, 2001). Emotion measurement therefore becomes important to study organisation behaviour. However, existing self-report measuring instruments in the workplace focus on the measurement of two-dimensional emotion models that include only positive and negative affect. The question is if these two-dimensional models are then sufficient to study emotions in organisation.

Research into the role of emotions in work settings has been too narrowly confined to studies of positive and negative affect (Ashkanasy, Härtel & Daus, 2002). In one of the narrowly confined two-dimension studies, Russell (2003) claimed that valence and arousal (two dimensions) are the ‘core processes’ of affect and constitute the primitive basis of emotional experience. Scherer argued that a ‘primitive’ of feeling is much richer and more complex than a position in a simple two-dimensional space (Scherer, 2004, 2009). This view is supported by the fact that, when one asks people what they felt during a certain emotion episode, they rarely spontaneously answer in terms of valence and arousal gradation.

In 2004 Scherer and his collaborators asked a representative sample of the Swiss population what emotion they had experienced on the previous day. They described the situation and labelled their subjective experience, their feelings, in their own words. Only a very small percentage of more than 1000 respondents used general or positive valence labels (5.8%), and almost none used direct arousal terms (Scherer, Wranik, Sangsue, Tran, & Scherer, 2004).

To support the research of Scherer (2004), two-dimensional models have also been critiqued on its ability to capture the cognitive facets of emotion (e.g. emotion labels, linguistics across culture, etc.) (see Larsen & Diener, 1992). Studies of energetic and tense arousal claimed that energetic arousal and tense arousal are the basic dimensions. This would imply that other dimensions are mere mixtures of these dimensions. However, quantitative tests show that two-dimensional models show a poor fit to actual data (Schimmack & Grob, 2000; Watson, Wiese, Vaidya, & Tellegen, 1999). Research evidence rather supports a three-dimensional approach for accurately assessing emotional response, and those models with less than three dimensions may not be accurate enough (Daly, Lawrence, & Polivy, 1983; Havlena & Holbrook, 1986; Russell, 1983).

Researchers have therefore searched for the most suitable low-dimensional depiction of the emotion domain, and even though researchers like Yik, Russell, & Feldman-Barrett (1999) have focused entirely on two-dimensional models, such as the valence-arousal model, the search still continues (Fontaine, Scherer, Roesch & Ellsworth, 2007). However, when one looks too narrowly to simplistic dimension structures, valuable information can be overlooked. In this regard Frijda (1986, p. 184) stated that: *"One could not reconstruct the experience [of emotion] if only the [two] dimensional values were known. Something essential appears to be lacking"*.

The key focus of this article is therefore to report on the meaning of emotion episodes (by determining the emotion dimensions) and the categories of emotion episodes as reported by employees in the context of the work environment.

Background to the study

An investigation into the meaning of emotions (in the context of emotion features) and also an investigation of emotions in the natural context in which they occur, will add value to the body of evidence in the domain of organisation behaviour (Gooty et al., 2009). Within the field of industrial psychology, on more specifically organisational behaviour, the context will be to investigate the emotion episodes in the workplace. International research studies have only recently acknowledged the importance of investigating the meaning of emotion episodes (Fontaine, Groenvynck, Van den Eede, Veirman & Scherer (as cited in Groenvynck, 2010).

In order to investigate the meaning of emotion and emotion episodes, two theories can be utilised to understand the content and meaning of emotion episodes. Firstly, the affective events theory (Weiss & Cropanzano, 1996) states that environmental conditions in the workplace result in 'hassles and uplifts' for employees, referred to as 'affective events': firstly, the triggering of behaviour directly by emotions, for example anger, sadness and shame, and secondly, emotions influencing behaviour indirectly, for example through motivation or recognition. Emotions are the psychological crossroads which mediate between environmental (workplace) input and behavioural output (Scherer, 1994). Positive emotions at work, such as high achievement and excitement, have desirable effects independent of a person's relationships with others, including greater task activity, persistence and enhanced cognitive function (Staw, Sutton & Pelled, 1994). Negative emotions at work can lead to stress through work overload, demotivation as the result of lack of rewards, and destructive personal relationships (Olofsson, Bengtsson, & Brink, 2003).

In terms of emotion meaning (for example the dimensions of pleasantness, power and arousal), the componential emotion theory offers a framework of features that these emotion episodes can be measured against (Fontaine et al., as cited in Groenvynck, 2010). The componential emotion theory offers a framework in which emotions should be investigated with regard to situational circumstances as well as the synchronised activity it causes in each of the components of emotion. The different components include the appraisal component, the action tendency component, the subjective feelings component, the expression component and the regulation component (Fontaine, Poortinga, Setiadi, & Markam, 2002).

In this regard, Izard (1993) stresses that emotions (the experience of pain, anger, and joy) are central and manifest themselves as action tendencies, perceptual biases or emotional states. Emotions can furthermore directly cue specific behaviours, as well as indirectly influence behaviour by their effect on physiological, cognitive, or social processes (Izard, 1993). Emotions can influence the workplace in a number of ways (Scherer, 1994). Therefore, research results on the meaning of emotion and emotion episodes can ultimately assist in the ability to understand emotions in the workplace and the effective dealing with emotions and emotional information in the workplace, and assist employees in managing their occupational stress and maintaining their psychological well-being (Oginska-Bulik, 2005).

The goal of this study was to investigate if current dominating two-dimensional models are sufficient to measure emotion episodes in the workplace. It wanted to determine if possible multiple-dimensional models could be determined when measured in the context of emotion features of the componential emotion theory. It secondly wanted to determine what the emotion episodes are that are reported by employees in a specific cultural group.The literature review will thus focus on current two-dimensional models of emotion measurement. Thereafter an overview will be given of the componential emotion theory as a method to investigate the multiple dimensionalities of emotion experiences in the workplace. Attention will be given to emotion and emotion episodes in the workplace, and finally reference will be made to the Affective Events Theory to study emotion episodes in the workplace.

Trends from the research literature

Self-report measures assessing emotions in the workplace focus on two-dimensional models, e.g. Watson and Tellegen's (1985) positive and negative affect schedule and Thayer's (1989) tense and energetic arousal. An overview of such measurement instruments will now be presented:

Watson and Tellegen's (1985) positive and negative affect schedule

In research, two broad, general factors normally labelled Positive Affect (PA) and Negative Affect (NA) have emerged reliably as the dominant dimensions of emotional experience. These factors have been identified in both intra- and inter-individual analyses, and they emerge consistently across diverse descriptor sets, time frames, response formats, languages

and cultures (Watson, Clark, & Tellegen, 1984; Watson & Tellegen, 1985). To measure these factors, Watson, Clark, and Tellegen (1988) developed the Positive and Negative Affect Schedule (PANAS), which consists of two 10-item scales for PA and NA, respectively.

The Positive and Negative Affect Schedule (PANAS) measures positive and negative constructs as both states and traits. Therefore, used as a psychometric scale the PANAS can show relations between positive and negative affect with personality states and traits (Watson et al., 1988). The structure of PANAS has consistently emerged as two dominant and relatively independent dimensions, and also claimed to provide independent measures of positive affect and negative affect (Clark & Watson, 1991). Watson and Tellegen (1985) wrote that pleasantness is the bipolar opposite of unpleasantness and that positive affect is independent of negative affect. Watson and Clark (1997, p. 270) wrote that *"variations in positive and negative mood are largely independent of one another"*.

The measure that has been widely used in tests of this model is the PANAS (Watson et al., 1988). Its scales have been renamed positive activation (PA) and negative activation (NA) to convey the activated nature of these dimensions. According to Watson et al. (1988, p. 1063), "(h)igh PA is a state of high energy, full concentration, and pleasurable engagement, whereas low PA is characterised by sadness and lethargy. In contrast, Negative Affect (NA) is a general dimension of subjective distress and unpleasurable engagement that subsumes a variety of aversive mood states, including anger, contempt, disgust, guilt, fear, and nervousness". The PANAS has been used for diverse purposes in clinical (e.g. Clark & Watson, 1991), social (e.g. Schmeichel, Vohs, & Baumeister, 2003) and personality (e.g. Hemenover, 2003) psychology research.

Thayer's (1989) tense and energetic arousal

Self-reporting measurement of emotion as subjective experiences (valence and arousal) in the workplace has become a popular tool for researchers to investigate emotions in the workplace. However, according to Fontaine et al. (2007) the dimensionality of emotion experiences must be revisited.

In 1989, Thayer's study of the dimensionality of people's experiences of activation led to four independent factors, namely two activation factors and two deactivation factors being

obtained. Activation was reconceptualised as varying along two dimensions: *energetic arousal* (feelings ranging from sleepy to awake) and *tense arousal* (feelings ranging from calm to nervous) (Schimmack & Grob, 2000; Thayer, 1989; Watson et al., 1999). This is supported firstly with the conclusion that the two activation dimensions are related to different causes. For example, energetic arousal is influenced by a circadian rhythm (Thayer, 1989; Watson et al., 1999) unlike tense arousal that is not. Secondly the two activation dimensions can change in opposite directions. Energetic arousal decreases in response to low blood sugar levels while tense arousal increases (Gold, MacLeod, Deary & Frier 1995). Thirdly the two types of activation have different consequences; for example, energetic arousal is a better predictor of cognitive tasks than tense arousal (Heller, Nitschke, & Lindsay, 1997).

Watson and Tellegen's psychological research in 1985 on positive and negative affect and Thayer's (1989) on activation both led not to a single dimension, but to a two-dimensional structure, namely valence (high versus low positive affect and high versus negative affect). Thayer (1989) proposed two types of activation: *energetic arousal* (awake–tired) and *tense arousal* (tense–calm). This view has been challenged by claims that energetic arousal and tense arousal are mixtures of valence and a single activation dimension.

In 2007, Fontaine et al. re-opened the debate on the nature of the affective space based on the view that emotions have to be conceptualised as multicomponential processes. The componential emotion theory will now be discussed.

Fontaine, Scherer, Roesch & Ellsworth's (2007) Componential Emotion Theory

In union with the affective event theory, the componential emotion theory offers a comprehensive framework to study the meaning of emotions. This approach needs to be used in combination with the affective events theory, since one first needs to determine the emotions that are relevant, and thereafter the affective event theory is utilised to determine how these emotions manifest during events. The componential approach allows that some emotion components may be cross-culturally similar and some different (Breugelmans, 2004).

According to this theory, emotions are a fairly synchronised process consisting of relationships among various components, such as the appraisal component, motor expression component, neuro-physiological component, motivational component and regulation component (Fontaine et al., 2002). Frijda, Markam, Sato, and Wiers (1995) stated that instead of emotion terms, emotion components could be used for cross-cultural studies. Frijda, (1986); Lang (1977); Lazarus (1991); Ortony and Turner (1990), and Scherer (1984), emphasise the central importance of emotion processes consisting of simultaneous changes in several different components. The emotion process can be defined as "a complex of changes in different subsystems of the organism's functioning". In an emotion, these subsystems (the components) are differentially elicited and in some level change independently of each other (Frijda, 1986; Lang, 1977; Lazarus, 1991; Ortony & Turner, 1990; Scherer, 1984).

The componential emotion theory offers a framework in which emotions can be investigated with regard to situational circumstances as well as the synchronised activity it causes in each of the components of emotion. The components involved consist of the following: *Appraisal component*: The appraisal component links emotional responses during an emotional episode to external circumstances and personal goals and beliefs (Smith & Lazarus, 1993). Smith and Kirby (2001) discuss two important requirements of any appraisal theory. Firstly, an appraisal theory should describe the dimensions along which they occur. Secondly, any appraisal theory must be able to describe the cognitive processes that underlie the application of these dimensional evaluations. *Motor expression component*: The motor expression component include facial and vocal expressions that are experienced during an emotional episode: *Facial expression*: Peoples' faces express a large variety of emotions that include, but are not limited to, the basic emotions of anger, fear, love, sadness and anxiety and are regularly described as the observed facial expressions that they convey (Ekman, 1979). *Vocal expression*: Vocalisation of emotions is another means of expressing felt emotions. Scherer says emotions are associated with voice and speech behaviours and those emotions may be recognised quite accurately from voice and speech samples (Scherer, Wallbott, & Summerfield, 1986). *Neuro-physiological component*: Every bodily change is allegedly perceived as soon as it occurs during an emotional episode (James, 1884). One cannot abstract from an emotion all the feelings of its bodily symptoms and find anything left behind other than a cold and neutral state of intellect. James's theory was that bodily sensations occur prior to emotional feelings

(James, 1884). *Motivational component*: Frijda (2007) stated that emotions play an essential role in motivation and motivational processes during emotional episodes. Recent research suggests that a positive affect may increase motivation (Erez & Isen, 2002), and likewise a negative affect may decrease motivation. *Regulation component*: Emotional regulation refers to the processes related to influencing emotions that are experienced during an emotional episode, the situations under which they are experienced, and how, and if, an individual expresses such emotions (Gross, 1999).

It is clear that these components go beyond a mere representation of just subjective experiences. The componential emotion approach clearly outlines the concept of emotions and it is not only about a specific component but about all emotions as an entity in response to a specific event. This approach offers the possibility of structuring the emotion domain into a comprehensive framework that can validate results within the various research traditions. In essence, it will challenge the inclusivity of emotion measurements that measures only two emotion dimensions. In the last two decades a consensus has emerged within the emotion domain that the characteristics of emotions lie in the synchronisation of activity in various emotion components (Fontaine et al., 2007).

The componential emotion approach is competent for cross-cultural emotion research (Fontaine et al., 2007). Russell (1983) stated that from a universalistic perspective, it has been demonstrated that all languages across the world have emotion words, and that they tend to be organised in four main clusters: joy, sadness, fear and anger. From a relativistic perspective, it has been pointed out that there exist emotion words that are highly relevant for a specific cultural group and are untranslatable into other languages (e.g. amae in Japan) (Scherer, 1994; Scherer & Kappas, 1988), that important emotion words in the Western lexicon are not always translatable into other languages (e.g. sadness among Tahitians) (Levy, 1973), and that translation-equivalent emotion words can mean very different things across cultural groups. The componential emotion theory prepares the table for future cross-cultural emotion research. It asks the first questions on how each of the emotion components is organised (Fontaine et al., 2007), and the second question on how the emotion components interact in response to relevant events within a cultural group (Fontaine et al., 2007).

The conclusion can be drawn that it therefore becomes crucial to investigate the meaning of emotions in the workplace. Such a study has already been successfully applied in an international Dutch and Belgian sample where a four-dimensional emotion structure was found in a work setting (Fontaine et al., as cited in Groenvynck, 2010). This article will report if a multiple-emotion dimensional model can also be found in the emotion episodes reported by white Afrikaans-speaking working adults. Although Afrikaans is the third biggest language group in South Africa, the Afrikaner is a relatively young and unknown cultural group and there is little or no data about the Afrikaans-speaking emotion terms. Because Fontaine et al. (as cited in Groenvynck, 2010) had a great deal of success when investigating the meaning of emotion in the work setting, it would be interesting to conduct the same study in South Africa with the Afrikaans language group.

In the remainder of the research literature review a conceptualistion of emotions and emotion episodes in the workplace with specific reference to the Affective Events Theory will be presented.

Emotions at work

The groundbreaking work conducted in the 1980's and early 1990's on emotional labour (Hochschild, 1983) and emotional intelligence (Salovey & Mayer, 1990) indicates that studies on emotions in organisations became an important research topic. Researchers added to this view that emotions at work cannot be ignored. The many publications since then on this subject have resulted in a body of evidence on the understanding of organisational behaviour being available (Ashkanasy, Härtel, & Zerbe, 2005; Brief & Weiss, 2002; Fisher & Ashkanasy, 2000; Zummuner, Lotto & Galli, 2003).

When one zoom in on the subject of understanding organisational behaviour, it is clear that throughout the literature some researchers have focused on larger life events (Hart, Wearing, & Headey, 1993), workplace bullying (Salin, & Hoel, 2011; Vartia, 2001), sexual harassment (Koss, 1987; Rowe, 1996), daily hassles and uplifts (e.g. Kanner, Coyner, Schaefer, & Lazarus, 1981) and the narcissistic manager (Lubit, 2002; Maccoby, 2004) in the workplace. Some researchers have focused on the minor day-to-day occurrences that do have meaningful effects on the employee and the boss or management. Those apparently small events such as

a printer malfunction, irrelevant comments from co-workers or unrelated job assignments, are events that all play a role in, and impact significantly on, emotion episodes in the workplace (Hart et al., 1993). Whether the emotions are regarded as large emotion or as minor emotion episodes, *both* are equally important in the workplace.

Fineman already stated in 1994 that in organisational life one cannot longer ignore the fact that emotions are now part of the bigger picture. A a lot of decision making, although one may pretend that it is scientifically balanced (e.g. looking at balance sheets, complex financial reports and marketing reports), are due to a final "emotional" proposal from the decision maker. As a result, Fineman says (1994, p. 1): "*Emotions are within the texture of organising. They are intrinsic to social order and disorder, working structures, conflict, influence, conformity, posturing, gender, sexuality and politics. They are products of socialisation and manipulation. They work mistily within the human psyche, as well as obviously in the daily ephemera of organisational life" and therefore "(o)rganisational order depends on feelings of togetherness and apartness, while organisational control would be hard to conceive without the ability to feel shame, anxiety, fear, joy or embarrassment"* (Fineman, 1994, p. 2).

When looking deeper into the subject of emotions in the workplace, one may observe some of the specific emotions encountered in organisations, for example *fear*. As Flam states (1994, p. 66): "Fear means hiding away, occupying yourself with your professional work. The fear of separateness, fear of being identified, fear stemming from hesitation, from a lack of decision, fear of one's own self, of self-defining oneself. Fear of being crossed, of being defined." Another emotion such as *anger* may well occur in the workplace and the results are not beneficial to the workforce, lead to reduced productivity, and can increase employee turnover and cause lower quality work (Hall, 2008). A further emotion such as *happiness* can also be experienced in the workplace, and Dutton and Edmunds (2007) explained the result when happiness occur at work. Happiness at work is about mindfully making the best use of the resources and one has to overcome the challenges one faces. Actively relishing the highs and managing the lows will help one maximise one's performance and achieve one's potential. This not only builds one's happiness but also that of others, who will be affected and energised by what one do. Therefore, the conclusion can be made that positive emotions such as *happiness* will benefit the business and worker by increased productivity through

greater output and less down time and a happier and healthier employee (Rath & Clifton, 2005).

It is evident that the study of emotions in the workplace is of relevance as emotions influence, and is connected to, rationality and reasoning aspects in the workplace (Ashforth & Humphrey, 1995; Damasio, 1994). Employees are often elevated into positions of power within an organisation without having the experience or knowledge to identify or handle emotional episodes that daily present in the workplace. This alone may present further problems as the employee may feel misunderstood and unappreciated, resulting in negative emotions and further negative episodes. Studies have been conducted on various emotion episodes such as reduced performance, absenteeism and poor decision making resulting from emotional experiences (Higgins, Qualls, & Couger, 1992). Other emotions may cause creativity, high performance levels and job ownership (Higgins et al., 1992; Isen, 1999). Moreover negative emotion episodes usually produce much stronger emotions than episodes that are experienced positively (Weiss & Cropanzano, 1996), and researchers George and Brief (1996) and Weiss and Cropanzano (1996) believe that emotions hold the key to understanding work motivation.

When paying attention to the emotional side of organisational life, the nature of positive and negative emotions in the workplace are evident (Ashkanasy, Zerbe, & Härtel, 2002; Lord, Klimoski & Kanfer, 2002). Emotions such as happiness, satisfaction, support and friendliness have beneficial effects on an organisation's growth (e.g. Cameron, Dutton, & Quinn, 2003; Snyder & Lopez, 2002), while feelings such as anger, despair, sorrow and grief can be seen as negative emotions and can be found in every organisation (Frost, 2003). These negative emotions are rarely openly expressed at work, as it is more acceptable for people to subscribe to the strong norms to show a positive "face" and to present themselves as competent, coping, and emotionally resilient in the face of difficulties (Grandey, 2003; Hochschild, 1983). The conclusion can be made that there is a tendency to see negative emotions as 'bad' (Fineman, 2000).

One must be careful not to overlook the prevalence and potential value of negative emotions at work that may provide an individual both relief in a difficult situation and provide

important clues that the work team or organisation is dysfunctional. By acknowledging the presence of negative emotions, significant change may become possible (Fineman, 2000). Positive emotions at work should support a number of important organisational processes, such as skill building, creativity, effective social relations, organisational commitment, collective orientations, and pro-social behaviours and self-confidence. Fredrickson (1998) also notes that positive emotions serve as an answer to the harmful physiological and cognitive effects of negative emotions. It is clear from the literature above that research reports on emotions with both a positive and negative content. Therefore, once understanding emotion at work, it is important to investigate the context of the different emotion episodes that may occur in the workplace.

In 1998, Basch and Fisher investigated the causes of workplace emotions of employees of an Australian hotel, and focused on the emotion events in the workplace. Basch and Fisher (1998) observed specific events in an employee's day to day activities with the express intention of understanding which events produced certain emotional reactions. Workers were presented with ten emotions and asked to describe a work event that caused them to experience each of the given emotions. They divided the positive emotion events and the negative emotion events and named the types of events experienced. In the first categories, fourteen job events with positive emotion episodes were reported with examples such as acts of work colleagues, acts of management, goal achievement, receiving recognition, acts of customers, involvment in challenging tasks and interacting with customers (Basch & Fisher, 1998). In the second set of categories, thirteen job events with negative emotions episodes were reported, with examples such as personal problems, workload, physical situation, external environment, company policies, lack of influence and control and making mistakes. With regard to experiencing negative emotions, workers were more likely to cite events related to dealing with people than events related to dealing with things (Basch & Fisher, 2000).

In the late 50's work done by Herzberg, Mausner, and Snyderman (1959) asked respondents to tell them about a time that they felt especially good or bad about their job. The events were subsequently sorted into 16 categories. Some of these categories included episodes where respondents felt exceptionally good about their jobs, for example achievement, recognition,

the work itself, responsibility, and advancement/growth. Other categories included episodes where people felt particularly bad about their job, such as problems with supervisors, company policy, compensation and working conditions. In both mentioned studies, one might expect that different kinds of events would cause different emotions while working. Therefore, Izard (1991) stated that emotion researchers are quite clear that different types of events cause different emotions.

Herzberg proposed the Motivation-Hygiene Theory, also known as the Two-factor theory of job satisfaction in 1959. The motivation for his research work was to reach a better understanding of employees' attitudes and motivation. According to his theory, people are influenced by two factors. The first is *satisfaction*, which is primarily the result of the motivator factors (such as achievement, recognition, work itself, responsibility, promotion and growth). These factors help increase satisfaction but have little effect on dissatisfaction. The second factor is *dissatisfaction* and is primarily the result of hygiene factors (such as pay or benefits, company policy and administration, relationships with co-workers, physical environment, supervision, status and job security). These factors, if absent or inadequate, cause dissatisfaction, but their presence has little effect on long-term satisfaction.

Haag (2005) acknowledged that the amount of interaction a worker has with other people at work seems to be a strong determining factor in the extent to which that worker experiences negative or positive emotions related to their job. That is why Weiss and Cronpanzano (1996) say that when events happen to people in the work settings, people often react emotionally to these events. The emotions experienced during an emotion episode are related and can, therefore, be correlated with factors such as job satisfaction, organisational commitment and intention to quit (Basch & Fisher, 1998). By saying this, Basch and Fisher (1998) give an example: an enriched job might more often lead to discrete events involving feedback, task accomplishment and optimal challenge, which may then lead to positive emotions such as pride, happiness, and enthusiasm. In the study conducted by Basch and Fisher in 1998, the question was asked: "What job events or situations cause employees to experience specific emotions while at work?" For this reason, one has to understand the concept of "emotion episodes" because emotion is involved in such episodes.

Weiss and Cropanzano (1996) used the definition from the World Book Dictionary of event that says it is "a happening, especially an important happening". The Random House Dictionary say is "something that occurs in a certain place during a particular period of time". Roseman, Spindel, and Jose (1990) stated that it is important to keep in mind that it is the appraisal, evaluation and interpretation of events (rather than the event themselves) that will determine the emotion that is experienced. For example, Roseman et al. (1990) stated that when a person says "I feel proud to work for the company", that person appraises the company as an object that caused the emotion pride.

Little or no data on the context of emotion episodes among the white Afrikaans-speaking working adults in South Africa exists, even though Afrikaans is the third biggest language group in South Africa. However, the question still remains as to what the emotion episodes are that employees experience at work. In this regard, the Affective Events Theory can be used as a frame of reference to study emotion episodes at work. The Affective Events Theory (AET) is the only theory found in a literature search that can be applied to study emotion episodes at work (Weiss & Cropazano, 1996).

Affective Events Theory (AET) (Weiss & Cropazano's, 1996)

The importance of studying emotions in the workplace became clear when Weiss and Cropanzano (1996) presented a framework for studying emotions, moods and job satisfaction. The affective event theory (AET) became a method of investigating emotions and its influence on one's work (Weiss & Cropanzano, 1996). Researchers became involved in in-depth analyses of the causes of specific emotions and moods at work (Brief & Weiss, 2002; Briner, 1999; Payne & Cooper, 2001).

The importance of the Affective Events Theory is that emotional states are seen to lie at the core of attitude formation and employee behaviour in organisations (Ashkanasy & Daus, 2002). According to this theory, everyday emotional events influence the way one thinks in reference to one's jobs, one's employers, and one's colleagues. Ultimately, emotional build-up can profoundly affect our behaviour. The theory carries an important message to managers: emotions in organisational settings and the events that cause them are not to be ignored, even if they appear to be relatively minor *(*Ashkanasy & Daus, 2002). The theory

suggests that managers should pay attention to the emotional climate within the organisation. The positive or negative events that determine how one feels, determines the way one thinks and feels at work *(*Ashkanasy & Daus, 2002).

The model increases understanding of links between employees and their emotional reaction to events in the workplace (Weiss & Cropanzano, 1996). For instance, jobs that are high in scope should more frequently produce events (instances of positive feedback, important goals successfully met, etc.) which lead to momentary positive emotions (joy, happiness, pride). Weiss and Cropanzano propose that affective experiences may lead to spontaneous affectivety-driven behaviour such as acts of good or bad citisenship (Weiss & Cropanzano, 1996).

However, the affective events theory suggests that affective events cause both affective reactions (proximally) and attitudes and behaviours (distally) (Weiss & Cropanzano, 1996). According to the affective event theory, it is the growth of a train of positive or negative affective events that leads to positive or negative affect. For instance, an employee who is hassled by a demanding boss (an affective event) becomes angry and disgruntled (an affective state), and therefore suffers job dissatisfaction and begins to look for employment elsewhere. As a first step to understand this process, the emotion episodes experienced by employees will be investigated.

Research Objective and Questions

The general research objective of this research study therefore was to determine the meaning and content of emotion episodes among the white Afrikaans-speaking working adults in South Africa.

The following research questions were formulated to reach the research objective:

1. Will the meaning of emotion episodes consist of a two-dimensional or multiple-dimensional factorial model when measured in a work context in the white Afrikaans-speaking working adult language group in South Africa?

2. What are the different categories of emotion episodes reported in the white Afrikaans-speaking working adult language group in South Africa?

The potential value-adding of this study

The potential value-adding of this study to the world of Industrial Psychology will be to investigate the meaning and content of emotion episodes in a sample of white Afrikaans-speaking working adults in South Africa in the context of emotion features. By making use of the componential emotion theory approach (emotion dimension structure), it will ultimately provide a broader perspective on the meaning of emotion than the two-dimensional emotion models that are found in literature.

What will follow?

In order to understand the above, the research study will flow into a specific division. Firstly, in Table 1, the method explains the participants of this study, the procedure, the measurement instrument that was used and the statistical analysis. Secondly, in Part 1, Table 2, the *results* of the factor structure of emotion experience after orthogonal procrustes rotation towards the meaning structure will be reported, in Part 2, in Table 3, the results of the Categories of Episodes for Satisfying and Less Satisfying Emotion Experienced, in Table 4, the examples of reported Emotion Episodes with a satisfying content and in Table 5, the examples of reported Emotion Episodes with a less satisfying content. Thirdly, *discussion* will conclude this research article.

METHOD

Participants

A total of 179 white Afrikaans-speaking working adults between 18 and 70 years participated in the study. The minimum educational level for inclusion was Grade 12. The participants' first language is Afrikaans. This study was conducted in the Eastern Cape, Free State and North-West provinces of South Africa. A wide variety of occupations was covered in the study and each of the participants participated on an anonymous basis. The sample was a convenience sample and Table 1 presents some of the characteristics of the participants.

Table 1

Characteristics of the White Afrikaans-Speaking Working Adults in Emotion Episodes Exercise (N=179)

Item	Category	Frequency	Percentage (%)
Language	Afrikaans	179	100
Gender	Male	49	27
	Female	130	73
Age	18-30	36	20
	30-40	62	35
	40+	81	45
Province	Eastern Cape	145	81
	Free State	2	1
	North-West	32	18
Education level	Grade 12	80	45
	Certificate/Short Diploma	20	11
	3-year Diploma/Degree	18	10
	Post-graduate	43	24
	Other	18	10
Occupations	Teachers	62	35
	Police officers	44	25
	Clerks	14	8
	Financial advisors	11	6
	Engineers	9	5
	Marketing consultants	8	4
	Doctors	5	3
	Bookkeepers	5	3
	Hairdressers	4	2
	Accountants	4	2
	Panel beaters	4	2
	Psychologists	3	2
	Bankers	2	1
	Nurses	2	1
	Estate agents	2	1

In total, 179 white Afrikaans-speaking working adults participated in this study. The participants completed the Emotion Episode Questionnaire in their own language. The ethnicity of the group was white participants. In terms of gender, woman outnumbered men by two to one [women: 73% (N=130) and men: 27% (N=49)]. Twenty per cent (20%) of the group were between the ages of 18 and 29 years, whilst 80% were 30 years of age and older.

The largest part of the participants was from the Eastern Cape Province (81%). The majority (45%) of the participants had a Grade 12 education level, while 55% of the participants' had other tertiary levels of education (between a one-year diploma and post-graduate qualifications). The wide variety of occupations that was covered in this study included teachers, police officers, clerks, financial advisors, engineers, marketing advisors, doctors, bookkeepers, hairdressers, accountants, panel beaters, psychologists, bankers, nurses and estate agents.

Procedure

All participants were asked to complete the emotion episode grid. The participants described two emotional episodes consecutively. In total 358 emotion episodes were reported. To ensure reliability of the process in the completion of the questionnaires, instructions were formulated and discussed with each participant.

Measurement instrument

The episode Meaning Grid was developed as part of an Emotion Research Project at Ghent University in Belgium as part of an initiative of the International Society for Cross-Cultural Research on Affect that falls under the Swiss Affect Sciences Centre (http://www.affective-sciences.org/user/171). After the development of the Meaning Grid, a measurement instrument was needed to measure not only the meaning of emotion terms but to measure emotion episodes across cultures. This was also developed to enable the Meaning Grid (a fundamental perspective on the meaning of emotion) to progress into an applied approach (measurement of emotion episodes). The measurement instrument consists of two parts where Part 1 is explorative and utilises qualitative questions and Part 2 is an assessment of the emotion episode in the 144 features of the Meaning Grid.

Part 1:

- This part consists of an acceptance of voluntarily participation and biographical information.
- This part consists of an Emotion Frequency Questionnaire. Participants rated the feelings and emotions they have in general at work on a scale of 1 (never) to 7 (almost constantly). Example - "anxiety", "being hurt" and "love". The type of questions

asked were “can the participants vividly remember the emotion experience that they will report on in Part 2”.

Part 2:

The second part consists of an Episode Grid Questionnaire. Participants were asked to give a personal description of the situation that caused their last emotional experience and about their emotional reactions. Example:

- Please describe the emotional episode: *What happened?; Who was involved?; How did the situation begin?; How did it evolve?* and *How did it end?*
- When did the emotional episodes take place (e.g. four hours ago or three days ago)?
- Which emotions or feelings did you have in this situation? Please report the two most important emotions or feelings.
- Did you have other emotions or feelings in this situation? If yes, which one?
- Why did you have these emotions or feelings? What caused these emotions or feelings? Please describe what caused the emotions or feelings.
- Could others recognise your emotions or feelings by your face, your posture of your voice?
- What was your bodily reaction in this situation? Please describe how your body reacted to the emotional situation.
- What did you want to do in this situation and what did you do?
- What did you want to do in this situation but could not do or decided not to do?
- Did you try to control or alter your emotions or feelings in this situation?

In this part participants rated the emotion episode according to the six components and emotion features of the Meaning Grid (action tendencies, appraisal of events, bodily sensations, facial and vocal expression and emotional experiences) (Fontaine et al., 2007).

Statistical analysis

Part 1:

Making use of the SPSS program (Statistical Package for the Social Sciences software program) (SPSS, 2003), Principal Component Analysis (PCA) was executed to compute the

factor structure. The PCA is a form of exploratory factor analysis. Making use of the SPSS program, the Cronbach's alpha values were computed for each of the emotion terms. There are 24 emotion terms in the analysis, and the variation in the 144 emotion features could be perfectly represented by a solution with 24 components. In this regard Fontaine et al. (2007) state that the matrix is not positive definite (the rank is only 24, not 144). Fontaine et al. (2007) argue that factor analyses (exploratory or confirmatory) that assume underlying factors cannot be used with these data, as these techniques require a positive definite matrix. Fontaine et al. (2007) give the solution that PCA, however, is adequate, as it is a pure reduction technique. The argument is put forth that it makes sense to see whether a matrix of rank 24 can be further reduced to an even smaller number of components without losing much information. In lexical emotion research analysing a matrix with more variables than observations is not uncommon.

Part 2:

The incident classification system suggested by Bitner, Booms and Tetreault (1990) were adopted for developing a preliminary classification scheme. The episodes were sorted and reclassified until a meaningful set of categories were derived from the data. Data from the respondents were sorted into categories by an industrial psychology researcher and was reviewed by another psychologist. It was given to another industrial psychologist with a good track record of qualitative methods to classify into these categories as a reliability check on the category scheme. An inter-coder reliability measure suggested by Miles and Huberman (1994) (the number of agreements/total number of agreements plus disagreements), was used to calculate agreement between the two coders and the researchers.

Table 2

Factor Structure of Emotion Experience after Orthogonal Procrustes Rotation towards the Meaning Structure

	Emotion Feature	Emotion Component	Dimension 1 *Evaluation Dimension* (Pleasant vs Unpleasant)	Dimension 2 *Arousal Dimension* (High vs low)	Dimension 3 *Power Dimension* (Weakness vs Dominance)
8	I felt good	feeling	**-0,77**	-0,34	-0,07
46	I smiled	face	**-0,77**	-0,21	-0,22
64	The situation was pleasant for me (independently of the possible consequences)	appraisal	**-0,73**	-0,13	-0,10
47	I frowned	face	**0,68**	0,04	0,18
65	The situation had negative, undesirable consequences for me	appraisal	**0,65**	0,17	0,36
63	The situation involved behaviour which was unjust	action	**0,64**	-0,12	0,17
40	I felt my muscles relaxing	body	**-0,61**	-0,12	-0,26
7	I felt restless	feelings	**0,55**	0,23	-0,05
1	I felt bad	feelings	**0,53**	0,15	-0,08
62	The situation involved behaviour which violated laws or socially accepted rules of behaviour	appraisal	**0,53**	-0,13	0,19
67	The situation had threatening consequences	appraisal	**0,52**	0,13	0,02
85	I tried to control the intensity of my emotional feeling	regulation	**0,48**	-0,03	-0,14
71	I wanted to be tender and kind	action	**-0,46**	-0,08	-0,41
83	I wanted to show off	action	**-0,45**	-0,10	-0,07
66	The situation had positive, desirable outcomes for somebody else	appraisal	**-0,43**	-0,18	-0,44
80	I wanted to hit, harm, or say something that hurt	action	**0,42**	0,06	0,42
61	The situation was caused by my own	appraisal	**-0,41**	0,18	0,03

	behaviour				
78	I wanted to be seen, to be in the centre of attention	action	**-0,41**	-0,14	-0,16
60	The situation was caused by somebody else's behaviour	appraisal	**0,40**	-0,30	0,20
79	I wanted someone to be there to provide me help or support	action	**0,39**	0,23	-0,04
77	I wanted to be near people or things	action	**-0,38**	-0,10	-0,25
68	The situation involved me suffering a serious loss	appraisal	**0,38**	0,24	-0,02
58	The situation occurred suddenly	appraisal	**0,35**	-0,04	0,19
48	I had my eyebrows go up	face	**0,34**	-0,10	0,23
59	The situation was unpredictable	appraisal	**0,34**	0,02	0,13
49	I had my jaw drop	face	**0,34**	0,16	0,13
86	I showed my emotion to others less than I felt it	regulation	**0,25**	-0,10	-0,20
5	I felt active (aroused)	gesture	-0,34	**-0,60**	0,05
82	I wanted to disappear or hide from others	action	0,28	**0,60**	-0,03
4	I felt strong	feelings	-0,42	**-0,60**	0,10
72	I wanted to flee	action	0,30	**0,56**	0,11
9	I felt weak	feelings	0,39	**0,53**	-0,13
73	I felt an urge to be active, to do something	action	0,03	**-0,51**	-0,02
50	I had tears in my eyes	face	-0,14	**0,51**	0,17
6	I felt tired	feelings	0,40	**0,50**	-0,21
38	I felt weak limbs	body	0,30	**0,49**	0,19
53	I spoke in a trembling voice	voice	0,18	**0,47**	0,43
57	I spoke in a firm, forceful voice	voice	0,25	**-0,47**	0,19
41	I had stomach discomfort	body	0,29	**0,46**	0,22
51	I closed my eyes	face	-0,04	**0,46**	0,22
84	I wanted to engage in action	action	0,11	**-0,45**	0,06
76	I lacked the motivation to pay attention to what was going on	action	0,19	**0,44**	-0,05
43	I felt cold	body	0,21	**0,44**	0,02
55	I had speech disturbances	voice	0,15	**0,40**	0,37
2	I felt awake	feelings	-0,19	**-0,40**	-0,01
39	I sweated	body	0,22	**0,37**	0,27
70	The situation had consequences I could	appraisal	-0,16	**-0,32**	-0,22

	live with				
69	The situation had consequences I had sufficient power to change or control	action	0,13	**-0,31**	0,12
81	I did not want to do anything	action	-0,01	**0,30**	-0,27
75	I wanted to make up for what I had done	action	0,05	**0,25**	-0,15
44	I felt my breathing slowing down	body	-0,15	**0,25**	-0,22
12	I experienced the emotion for a long time	feelings	-0,07	0,16	**0,11**
52	I spoke faster	voice	0,05	-0,03	**0,66**
54	I spoke louder	voice	0,15	-0,21	**0,66**
3	I felt quiet	voice	0,23	0,36	**-0,55**
42	I felt my heartbeat getting faster	body	0,07	0,07	**0,53**
45	I felt hot	body	0,20	0,19	**0,46**
74	I wanted to destroy whatever was close	action	0,35	0,18	**0,46**
10	I felt passive (calm)	feelings	-0,21	-0,13	**-0,46**
11	I experienced an intense emotion	feelings	0,05	0,01	**0,42**
56	I spoke more slowly	voice	0,06	0,16	**-0,33**

The alpha cronbach values obtained for *Evaluation* was 0,89, for *Arousal* 0,83 and the *Power* dimension had a reliability of 0,71.(Indicative of satisfactory reliability values).

Close inspection of Table 1 indicates that the feature "*I felt my heartbeat getting faster"* loads on both factors 1 and 2. Furthermore, it should be noted that the features: "*I showed my emotion to others less than I felt it"*, "*I wanted to make up for what I had done", "I felt my breathing slowing down"* and "*I experienced the emotion for a long time"* have values of less than 0,3, which indicates that it does not load significantly on any of the factors.

Table 2 indicates a three-factor solution that explained 30,61% of the total variance. The first dimension was labelled *evaluation-pleasantness dimension* (where pleasant emotions are opposed to unpleasant emotion terms) and explained 14,04% of the variance. The second dimension was labelled *activation-arousal dimension* (with fear terms as opposed to, for instance, restfulness) and explained 9,76% of the variance. The third dimension was labelled *power-control dimension* (with anger as opposed to sadness) and explained 6,81% of the variance.

The first dimension that emerged according to Table 2 was an *evaluation-pleasantness dimension*. This dimension evaluates the pleasantness versus the unpleasantness of an

emotion. This dimension is characterised by intrinsic appraisals of pleasantness and goal conduciveness and action tendencies of approach versus avoidance (Fontaine et al., 2007). Examples of emotion terms are *"I felt good"*, *"I smiled"* and *"the situation was pleasant for me (independently of the possible consequences)"*.

The second dimension which emerged was an *activation-arousal dimension*. According to Fontaine et al. (2007) this arousal dimension is characterised by sympathetic arousal, e.g. rapid heartbeat and readiness for action. Examples of emotion terms on this dimension included *"I felt active (aroused)", "I wanted to disappear or hide from others"* and *"I felt strong"*.

The third dimension that emerges was a *power-control dimension.* This dimension is characterised by appraisals of control, how powerful or weak a person feels when a particular emotion is experienced. This includes feelings of dominance or submission, the impulse to act or withdraw and changes in speech and parasymphatic symptoms (Fontaine et al., 2007). Examples of emotion terms on this dimension included *"I experienced the emotion for a long time", "I spoke faster"* and *"I spoke louder"*.

Therefore, a three-dimensional emotion structure was found after determining the meaning and content of emotion episodes (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult group, of which the sample includes a) the evaluation-pleasantness dimension, b) the activation-arousal dimension and c) the power-control dimension.

Part 2

The second part of the results focused on the emotion episode categories reported in this multiple-dimensional structure. Firstly, in Part 2 Table 3 presents the results of the categories of emotion episodes for satisfying and less satisfying emotion experiences. Nine categories emerged for satisfying emotion episodes, with a total of 84 emotion episodes reported. Less satisfying emotion episodes were reported 267 times within 19 different categories of emotion episodes. Examples of reported episodes are reported in Tables 4 and 5. Only eight categories were categorized differently than the original coders and therefore a reliability

overlap of 97% were achieved, which is far more than the recommended 70% overlap suggested by Miles and Huberman (1994).

Table 3

Categories of Episodes for Satisfying and Less Satisfying Emotion Experienced (N=358)

Categories of Episodes for Satisfying Emotions Experienced			Categories of Episodes for Less Satisfying Emotions Experienced		
	N	**%**		**N**	**%**
Goal Achievement	(31)	9	Behaviour of Work Colleagues	(58)	16,2
Receiving Recognition	(20)	5	Acts of Boss/Superior/Management	(47)	13,1
Personal Incidents	(10)	3	Task Requirement	(33)	9,2
Behaviour of Work Colleagues	(8)	2	Personal Incidents	(26)	7,2
Task Recognition	(6)	2	Subordinate Behaviour	(17)	5
Acts of Boss/Superior/Management	(4)	1	Emotional Involvement	(15)	4,2
Emotion Involvement	(3)	1	Work Mistakes	(13)	4
Workplace Policy	(1)	0,2	Customer Behaviour	(13)	4
Subordinate Behaviour	(1)	0,2	Workplace Policy	(8)	2,2
			Workload	(8)	2,2
			Lack of control	(8)	2,2
			Involved in disciplinary action	(8)	2,2
			Workplace strikes	(4)	1,1
			Lack of Goal Achievement	(3)	1
			External Environment	(2)	0,5
			Physical well-being	(2)	0,5
			Lack of Receiving Recognition	(1)	0,2
			Wellness of colleagues	(1)	0,2
			Unfairness in the workplace	(1)	0,2
Total	**84**	23%	**Total**	**267**	75%

**Note:* 7 (2%) out of the 358 emotion episodes reported in the workplace were unclassifiable.

In Table 3 one hundred and ninety seven respondents reported 84 satisfying and 267 less satisfying emotion episodes that took place at work. Seven (7) out of the 358 emotion episodes were unclassifiable. Only 8 categories were not categorised by the independent coders and an overlap of more than 90% was achieved.

Each participant reported two (2) emotion episodes. Using the theory of Herzberg (1959), the categories were first classified as satisfying or dissatisfying emotion episodes.

Nine categories of satisfying emotion episodes emerged (see Tables 3 and 4) and nineteen categories of less satisfying emotion episodes emerged (Tables 3 and 5). In terms of the categories of satisfying and less satisfying episodes, less satisfying emotion episodes outnumbered satisfying emotion episodes by three to one. The numbers in brackets in Table 3 are the frequency of co-occurring reported emotion episodes.

Categories of Episodes for Satisfying Emotions Experienced

The highest category of satisfying emotion episodes was *"Goal Achievement",* with 31 emotion episodes reported. Goal achievement describes situations where job related targets or goals are successfully arrived at and are acknowledged with pride. Therefore, when targets or goals are reached by people, very positive emotions will surround the work situation as well as any social event. The second highest reported episode in the satisfying category was *"Receiving Recognition",* with 20 emotion episodes at work. This category refers to appraised behavior towards employees or colleagues for goals achieved or helping behaviour. The third highest category reported was *"Personal Incidents",* with 10 emotion episodes. This reflects one's own satisfying experiences that was of a personal nature and not work-related, although the emotion of the episodes was carried over to the work situation.

"Behaviour of work colleagues" is behaviour towards oneself, an employee, colleagues or management. *"Task recognition"* is appraised behavior towards an employee, colleagues or management for a job well done. *"Acts of Boss/Superior/Management"* is recognition through acts or gestures from the boss/superior or management indicating approval and was reported 4 times. *"Emotion Involvement"* was reported 3 times and involves recognition of emotions of pride, satisfaction, ownership of the employee by management. *"Workplace Police",* involving procedures instituted to provide positive outcomes for employees, and *"Subordinate Behaviour"* are acts of defiance and a subversive nature undermining the authority of management and thus enhancing the employees' ego; these were only mentioned once and were reported the least number of times.

Examples of the reported emotion episodes with a satisfying content are reported in Table 4. Five examples are reported per emotion episode. In cases where less than five episodes were reported, all the episodes are reported.

Table 4

Examples of reported Emotion Episodes with a satisfying content

Goal Achievement (N=31):

1. I had to order a specific part for a customer. We normally don't carry it in stock. The customer normally gets very angry when this happens. I could find the specific part. I could specifically satisfy the customer.

2. I received a complaint from a broker. Submitted a life case and all that needs to be done and case accepted in record time. We both triumph from situation.

3. I had quite a challenge in completing and creating a report (programming) and a deadline to finish it in time. I finished it in time.

4. I was given a task to do which was rather difficult, which I didn't believe that I would be able to do or I would be able to finish it in time. But I was able to finish it and also in the time frame.

5. My supervisor ordered me to find a contact number for someone who was in the newspaper. My supervisor does not know the person's name or which publication he was featured in. I ended up finding the right contact number of the person in the newspaper.

Receiving Recognition (N=20):

1. I thought due to my age and recession, I would be asked to retire early to make way for the younger colleagues. However, my manager called me in to let me know he wanted to keep me. He wanted my assurance that I would be staying on for the foreseeable future.

2. Client phoned to say thanks for great service and he will recommend me to others!

3. I was called to the boss's office. He praised me for work well done and offered me an incentive for it!!

4. It was a very happy experience when one of my clients came in and she said that she was very happy with her hair. It made me happy that she was happy!!

5. The end of the term. The whole staff was involved. The principal ends the term with a message of thanks, humor and good spirits. He used video clips. We experienced each other in a proper way as comrades!!!

Personal Incidents (N=10):

1. Collecting money for 67 minutes for Mandela Day.

2. My parents surprise me on my birthday.

3. My sister got engaged finally after a long time being single. Very good choice of a husband she made.

4. New goat lamb was born, mother rejected it. I nursed him. Lamb doing very well.

5. Receiving an e-mail from my sport club, complimenting me on mentorship and guidance shown to the young players.

Behaviour of Work Colleagues (N=8):

1. It was my birthday and my colleagues bough a cake to celebrate with me during lunch.

2. The school re-opened after the Soccer World Cup. I felt good to be with my colleagues and the learners.

3. As the manager I felt overwhelmed, pleasantly surprised and very grateful for the teamwork at work.

4. I am working with colleagues with good manners at work, hard workers and always positive. It is a good emotional experience for me.

5. My colleagues always complimented me on the friendliness with which I treated the customers. I always feel good after a compliment from my colleagues.

Task Recognition (N=6):

1. I was asked by Management at the firearm office to help out with the certifying of firearm applications.

2. I was asked (by my boss) to give a demonstration of the presentation about my work to my other colleagues. Management and my boss were present.

3. Fundraiser for charity. Corporate social investment. Contacting clients asking for donations.

4. My boss asked me to do reporting in a foreign language. This task requirement helped my team colleagues.

5. Child has concentration problems. I called the mother and she came for a meeting to discuss how to help her child.

Acts of Boss/Superior/Management N=4):

1. My daughter was advised to see a psychologist once a week. It meant a little extra time away from work. I approached my boss and he was more than accommodating.

2. Interest and support shown by management toward extra-mural trip.

3. My boss and I were chatting and she misunderstood something because she read it wrong 3 times and we laughed hysterically. We had such a fun moment and joked about it for the rest of the morning.

4. The District Manager called me when I walked past him. He enquired if I still enjoyed being at the school. I answered affirmatively. He assured me that I will not be transferred.

Emotion Involvement (N=3):

1. One of the teachers had a personal problem and came to me for help.

2. I park my car at school and the children came running towards me to help me get my stuff out of the car. Telling me all about their weekend!!!

3. I read an e-mail to a colleague regarding a conference how to prepare children spiritually and emotional with problems.

Workplace Policy (N=1):

1. Happiness, its five o'clock I can go home.

Subordinate Behaviour (N=1):

1. Regional staff member want to resign. Sadness involved in decision both sides – she withdrew resignation. Ended well.

In total, 23% of all stories told (N=358) were responses of satisfying emotion episodes in the workplace.

Categories of Episodes for Less Satisfying Emotions Experienced

In the categories of less satisfying emotion episodes (Table 3), 58 emotion episodes were reported as *"Behaviour of Work Colleagues"* and those are behaviour towards the employee or a colleague of a less satisfying manner; most of these emotion episodes were relationship orientated. The participants reported 47 episodes of *"Acts of Boss/Superior/Management"* and those involved acts showing disregard for employee emotions and feelings. *"Task Requirement"* where an employee is required to perform undesirable tasks, was reported 33 times. These categories are appraised less satisfying behaviour towards oneself or others by work colleagues, managers, supervisors and customers.

"Personal Incidents" was mentioned 26 times and it is less satisfying personal experiences that were of a personal nature and not work related, although the emotion of the episodes was carried over to the work situation. *"Subordinate Behaviour"* is acts of defiance and subversive nature undermining the employee and thus enhancing management's power, and was reported 17 times. *"Emotional Involvement"* was classified as a category where the employee became emotionally involved. *"Work Mistakes"* is feelings of apprehension, guilt and anxiety as a result of making a mistake at work, and it was reported 13 times. *"Customer Behaviour"* is about disrespectful and intimidating customer behaviour.

"Workplace Policy" involves disagreement with management rules and policy that impact negatively on the employee *"Workload"* involves overload of work for unrelated pay or too much work for the staff complement, *"Lack of Control"* involves no set structure being in place, so that limitations and boundaries are undefined. *"Involved in disciplinary action"* involves resentment towards management for action taken against employees. All four

categories were reported 8 times in the present study. *"Workplace strikes"* is disruptive staff action, reported 4 times. Three episodes of *"Lack of Goal Achievements"* were reported and it involves non-achievement of set goals resulting in employer action. Two emotion episodes were experienced that involve external circumstances impacting on the job and is categorised as *"External Environment"*. *"Physical well-being"* emotion episodes were also reported 2 times and those are injuries caused by lack of adequate equipment or protection.

The next three categories were reported only once each by the participants. Those are *"Lack of Receiving Recognition",* that involves apathy of management towards goals achieved, *"Wellness of colleagues"* that involves fear of co-workers' safety and emotionally well-being, and *"Unfairness in the workplace",* that involves inconsistent application of rules and regulations.

Examples of the reported emotion episodes with a less satisfying content are reported in Table 5. Five examples are reported per emotion episode. In cases where less than five episodes were reported, all the episodes were reported.

Table 5

Examples of reported Emotion Episodes with a less satisfying content

Behaviour of Work Colleagues (N=58):
1. Attended a progress meeting at which a group of engineers represented the company. Many were unprepared and the meeting went very badly, took far too long and nothing much was achieved that day at the meeting. I got totally irritated!
2. I have my own office at work. New member started with no office space available. Other members want me to give up my office and share an office with someone else, I refused!
3. Pupils had to be kept busy. Volunteers asked. Felt irritated because once more only the same group of people was prepared to help out!! The other sat back and kept quiet.
4. I had to go and visit my husband in hospital, but before I can go I have to find somebody to take my place at the switchboard. All of a sudden everyone is too busy to help out. I was very upset about my colleague's behaviour. I have no other option to put all calls through to the CSC at the police station.
5. I was accused of having affairs with certain men at the workplace. Most of my colleagues got involved and spread the stories.
Acts of Boss/Superior/Management (N=47):
1. In finishing, in my opinion, a very important report, I wanted to talk it through with my boss and some colleagues before forwarding it. The meeting did start late; there wasn't big interest from the

others. I could tell everything I wanted, as my boss preferred to go home. The feedback was "yes, yes it's okay, sent it on".

2. A senior member accused me of throwing away an important document and accused me of being a liar. After the fight, the document was found on her table.

3. My area manager promised me a job as an assistant manager but she changed her mind about it. I was very upset and she hurt me very much. IT IS NOT RIGHT!!

4. My boss was upset that I was not booking my time according to what he wanted and threatened to fire me. I was fearful that he would follow through, now I have lost interest in my work.

5. At my performance appraisal meeting, it started off very well with my manager giving high marks. Head Office reduced my marks with no reason. Head Office does not answer my calls or enquiries about this.

Task Requirement (N=33):

1. I am in charge of regulating and checking telephone accounts. I do daily limit checks and when a member goes over his/her weekly limit, they are informed. I informed a member and he became agitated that I told him to slow down on his usage of outgoing calls with his phone.

2. I was busy with the English literature period with a Gr.11 class. Learners were disruptive/uncooperative. Although I asked for silence several times, a few learners continued mumbling. I was furious – raised my voice, threatening that nobody, not even the prefects, would be exempted from being chased out of the class if they don't listen.

3. It was my day off. I was called in to work, due to short staffing. Result: disappointment, anger and demotivated.

4. Visited a murder scene, three people burned to death. Had to assist on the scene. 2 years after the incident I was off sick with PTSD and I am still not ok.

5. I was "accused" by a Grade 12 learner that marks given (by me) for a project was "too low", compared to the marks given by other teachers for the same task/project.

Personal Incidents (N=26):

1. I was looking for accommodation, because of my family situation that I was going through together with my children. No one could help me, not even the station commander. It is not resolved, I am still struggling!

2. I had a argument with my ex-husband, started at home the previous evening. I was very upset at work, I struggled to work. I spoke to my psychologist and felt better afterwards, but the problems are still there.

3. A teacher asked my son to go and call a Gr. 9 learner. He came back and said she was not in class. Eventually she said he lied since she was in class, but not at the moment he was there. It upset me when my son was telling me the story.

4. I had accidentally dropped an expensive bottle of perfume at work and it broke. I have to pay for it!

5. One of my friends at work committed suicide. He shot himself and left his wife and 2 boys behind. The youngest boy has a paraplegic condition. I am sad at work.

Subordinale Behaviour (N=17):

1. A subordinate was told to do something and became uptight and cheeky. I just told her what to do. Made sure she understands and walked away. She answered back and it wasn't necessary as it was a

single instruction. I told this is what you will do and that is it. She did it and now resents me.

2. My subordinate didn't report a meeting in time. It caused lots of problems (thereafter, I tried to educate him on why it is important to be on time and act professionally).

3. Employee went behind my back to state that she is not happy with midyear review. But when I asked her, she said she was happy. It caused problems, and had a meeting to talk about the unhappiness.

4. Irritation with co-worker due to poor work etiquette (myself and the receptionist). Fist thing in the morning, she go onto the internet (Facebook) instead of working. I reprimanded her.

5. I wanted to go home as I had far to travel. My assistant was delaying me. My assistant kept asking me questions and asked for my help on task that I had assigned to him. This forced me to stay on longer. Eventually I left and told him to deal with it himself and take some responsibility for his own work. I left and the work was never completed.

Emotional Involvement (N=15):

1. A child in my class told me her father hits them, I was sad and furious that incidents like this take place.

2. I consulted a client being diagnosed with terminal illness and query information on treatment. Involved basically but felt great sympathy for client and administration for their acceptance of the situation.

3. Client came in who had just lost her father and it was the day of the funeral. She was very tearful and we all went to hug her and her mom. I was very tearful thereafter but all of us at work gave her a lot of love and understanding.

4. When I found out one of my clients mother died, she was very emotional and that made me said, but after I consoled her she felt better.

5. A death, a client of mine had a heart attack. Very, very sad about the loss, lots of tears and sad faces, since this client was familiar to everyone and was more a friend as a client.

Work Mistakes (N=13):

1. A headcount target in January was found to be incorrect yesterday. Finance Section was involved at boardroom level. End with a short discussion with team.

2. My Finance Manger told me that my work did not balance. I was involved in the situation on my own. My financial month-end is to be finalized for the financial meeting. Ended well the Financial Manger assisted me.

3. I was involved in an argument with one of my colleagues. He complained that I lost one of his documents that I had to type. I denied it at first but eventually found it in my draw and I ended up apologizing to him.

4. There was an inspection involving inspectors from Head Office. There was a mistake when counting money in the safe which was later resolved.

5. Documents were not filed properly, but left discarded in a box. Much time was wasted searching for the information. The "responsible" person was not around to help resolve the situation.

Customer Behaviour (N=13):

1. Customer had a bad attitude from beginning – the glass he ordered never arrived as promised. Made him even more mad – I felt sad, very scared and emotional – when the glass arrived I felt relieved

and the customer happy.

2. A 3rd letter arrive a week and a half later, from the same firm, accusing me of the same incompetence and indolence towards my work.

3. I could not give client what he wanted when he wanted it. Client unhappy and impatient. Bad / unresolved.

4. A Friday afternoon a parent visited my class. He was angry about a letter in his child's homework book. He didn't greet me and just started screaming at me.

5. A client phoned to say that PG Glass fitted the wrong windscreen to her Merc 300 SCK. She is very unhappy. I reported it to head of claims and they are sorting it out.

Workplace Policy (N=8):

1. Boss insisted we wear ties and jackets. He thinks it will improve productivity. We had to comply to the instruction without any say in the matter.

2. I am entering into contract work and my company does not want to pay me what I want per hour.

3. The company I worked for restructured and the work I'm doing was centralized. They suddenly told me they are centralizing and did not tell me why. I was not part of the decision I was just told via e-mail. I did not even expect it I was very shocked and disappointed.

4. In 1982 four of us were merit rated and became supervisors. In 1989 nine supervisors were appointed without merit rating on the same salary scale. All the staff was not divided under 13 supervisors. Four of us had 8 staff members under our supervision. In 1991 we were again divided back into working units and not supervisors.

5. I wanted to take leave for 3 days and the commander didn't want to approve my leave because it was during the Soccer time. At the end after explaining, I got my leave.

Workload (N=8):

1. I was reprimanded for not having my typing work done in time. I was called into the boss's office and warned to work faster.

2. I was working under a lot of stress, receiving more dockets than I could attend to without the necessary resources.

3. Problem came up and I was involved very late in this topic. I gave the max input, but it was not enough time to give feedback to my boss. Next evening my boss was very disappointed.

4. Argument with my boss. There is too much general admin work, which take up too much time, resulting in the core functions being not performed. At the end of the day they want results. Time for actual work is not there anymore. It ended in frustration.

5. I have to finish a report for my work on my own. There is inspection the next day. Too much to do in a short period of time. Finished everything.

Lack of Control (N=8):

1. In a rugby fixture, the opposing team played dirty continuously and the match ended in a fight with two of my players going to hospital for stitches.

2. The electrical suitcase was lockup in an office and someone stole some of the tools. The case was reported but the thief was never caught. I reported the theft to my seniors but they decided I was

negligent and I had to replace the stolen tools.

3. A rugby match, two weeks on playing against another school. Some parents again chirping the ref all the time. Being ignored if asking them to calm themselves. Emotions only come after letter was written by other school complaining.

4. Rugby match on of our boys got hurt. Head bud from opposite side. Parent very angry – storm onto the field.

5. I get asked to update a staff/project resuming sheet which I did accurately and it gets changed and manipulated by my boss to brick the scenario.

Involved in disciplinary action (N=8):

1. I was informed that a criminal case was opened against me by a member of the public for something I didn't do. The case is still pending.

2. I was asked if I would appear in a hearing to say something positive about a manager colleague. I agreed but knew he is a very unpopular person. I also knew that if I were called to support him my other colleagues would frown on the fact as they were all against him and wanted him fired.

3. Was informed that I might be disciplined for something that was out of my control.

4. I was called in for a hearing. The foreman was involved and my "appi" (Trey) wanted him to do something but it was not granted for.

5. I send an e-mail to a old friend that used to be my manager. They screened all the e-mails and picked it up. I had to go to a disciplinary hearing, and was almost fired. I had to sign a warning and agree to never speak to her again during work hours.

Workplace strikes (N=4):

1. Striking of the unions.

2. The general strike. The school, the teachers. Many problems because the department is not prepared to see reason. It has not been resolved.

3. Strike of SAOU members.

4. Industrial strike.

Lack of Goal Achievements (N=3):

1. Commander attended HR review. Received bad marks on Performance Chart for station.

2. Only I was involved. I was annoyed by not being able to do something myself and that I had to rely on others for the info. I took action to get the functions myself and now I don't have to rely on others.

3. Me and my superior where given a task to complete. We didn't complete the task and the blame was shifted onto me.

External Environment (N=2):

1. Received a letter from a firm informing me that I don't do my job. I have on a previous occasion informed and provided them with evidence that it is untrue. The letter and files were handed to Legal Department. I was advised not to communicate with the firm as they are trying to intimidate me. They will deal with the firm.

2. The supplier demanded her payment. The payment was already processed by our Financial Head Office and the bank delayed the transaction into her account.

Physical well-being (N=2):

1. I was very stressed about work. When I asked to be transferred, the superior just gave me more stressful work to do. I had epileptic fit at work. Later nervous breakdown. Still not working. The working situation and surroundings.

2. Work related illness. Inhalation of harmful gasses. I am working in the SAPS Garage. I started getting ill and was frequently vomiting at work from petrol inhalation.

Lack of Receiving Recognition (N=1):

1. Increase time, received less than what I thought I deserved compared to counterpart. Anger at boss. Involved talking about the problems between boss and myself with a 3rd party.

Wellness of colleagues (N=1):

1. I do not get emotional at work I am on anti-depression medication.

Unfairness in the workplace (N=1):

1. One of my colleagues was offered a higher position although I have been on the same level for longer.

In total, 75% of all stories told (N=358) were responses of less satisfying emotion episodes in the workplace.

DISCUSSION

At present, the existing self-report measuring instruments in the workplace focus on the measurement of a two-dimensional model involving valence and arousal (Watson & Tellegen, 1985). However, Fontaine et al. (2007) argues for an investigation of multiple-dimensional models of emotion using the componential emotion theory. Different components in this theory include (a) appraisals of events, (b) psychophysiological changes, (c) motor expressions, (d) action tendencies, (e) subjective experiences and (f) emotion regulation. Fontaine et al. (2007) also said that, when emotions are investigated in the natural contexts in which they occur, it is also essential to study the emotion episodes in the workplace that cause them. The only study reported in this regard was the work of Basch and Fisher, conducted in 1998. This study mostly investigated emotion events in the workplace but no study has been conducted to determine the content of emotion episodes among the white Afrikaans-speaking working adults in South Africa. Because Fontaine et al. (as cited in Groenvynck, 2010) had a great deal of success when investigating the meaning of emotion in

the work setting, it would be interesting to conduct the same study in South Africa with the Afrikaans language group.

The general research objective of this research study was to determine the meaning and content of emotion episodes in the white Afrikaans-speaking working adult group in South Africa.

The results of this study indicated a three-dimensional emotion structure (*evaluation-pleasantness, activation-arousal* and *power-control dimension)* with a sample group of white Afrikaans-speaking working adults. Researchers have adopted a two-dimensional model [pleasantness (valence) and arousal (activation)], or a rotation thereof (such as positive and negative affectivity, or tense arousal and energetic arousal) (Yik et al., 1999). However, Fontaine et al. in 2007 argued for an investigation of a multi-componential emotion model. The result of the present study agreed with the earlier findings of Osgood and colleagues, namely a three-dimension emotion structure. By using the Fontaine et al. (2007) approach (feature profile of all six components) the meaning and content of emotion episodes in the white Afrikaans-speaking working adults in South Africa was successfully determined. Next, two research questions will be discussed.

Part 1:

Will the meaning of emotion episodes consist of a two-dimensional or multiple-dimensional factorial model when measured in a work context in the white Afrikaans-speaking working adult language group in South Africa?

The results confirm a three-dimensional emotion structure (*evaluation-pleasantness, activation-arousal* and *power-control dimension)* within a sample group of white Afrikaans-speaking working adults. This is more than the two-dimensional models indicated in the research literature.

The first dimension was inclusive of the *evaluation-pleasantness dimension* and evaluates an emotion's attributes of pleasantness versus unpleasantness. It is characterised by intrinsic appraisals of pleasantness and goal conduciveness and action tendencies of approach versus

avoidance (Fontaine et al., 2007) that facilitate information processing and prepare the organism for adaptive behaviour (Scherer, 2009). Examples of emotion terms presented in this study are *"felt good"*, *"I smiled", "the situation was pleasant for me (independently of the possible consequences)", "felt restless", "wanted to hit"* and *"suffered loss"*. Pleasantness, at the level of subjective experience, summarises how well one is doing in terms of a hedonic valence of pleasant-unpleasant, good-bad, positive-negative, or appetitive-aversive. The pleasant dimension includes such feeling states as "happy" or "content," while the unpleasant pole includes "sad" or "upset" and the valence dimension (pleasure/displeasure) of core affective experience is determined by whether individuals' goals are met or blocked (Seo, Barrett, & Bartunek, 2004). These experiences are real and are an intrinsic part of an individual's performance or non-performance in their everyday working life.

Research into the *evaluation-pleasantness dimension* can be utilised in numerous ways in work settings to achieve this. Research suggests that pleasant emotions can improve creativity (Isen, Daubman, & Nowicki, 1987) and efficiency (Grawitch, Munz, & Kramer, 2003), broaden individuals' scope of attention (Fredrickson & Branigan, 2005) and increase intuition (Bolte, Goschkey, & Kuhl, 2003). Pleasant emotions can enhance problem-solving (Isen et al., 1987), improve certain types of information recall (Isen & Baron, 1991), increase efficiency in highly complex decision-making (Isen & Means, 1983) and lead to more cooperative approaches during conflict resolution (George, Brief, & Motowidlo, 1996). There is evidence that pleasantness increases personal resources by expanding cognitive processes (Fredrickson, 1998) and improving physical and mental performance (Bryan & Bryan, 1991). The converse may be said of all the above positive attributes of pleasantness and be applied to unpleasantness with all the negative connotations and consequences. Unpleasantness in the workplace generally produces daily hassles (e.g. Kanner et al., 1981), printer malfunction, irrelevant comments from co-workers or unrelated job assignments (Hart et al., 1993) and organisational politics (Buchanan & Badham, 1999; Ligos, 2003). Pleasantness generally promotes goal achievement, receiving recognition and personal incidents (Basch & Fisher, 1998), and employees in this state may actively avoid tasks or interactions that threaten that state of well-being or result in unpleasantness.

The second dimension was inclusive of the *activation-arousal dimension* and according to Fontaine et al. (2007) is characterised by sympathetic arousal, e.g. rapid heartbeat and readiness for action. Examples of emotion terms presented in this dimension included *"I felt active (aroused)", "I wanted to disappear or hide from others"* and *"I felt strong"*. Seo et al. (2004) stated that activation refers to a sense of mobilisation or energy and summarises one's physiological state in terms of its level of activation or deactivation. Similar terms used to describe it include arousal, energy, tension, or behavioural readiness. The activation dimension includes such affective feelings as "elated" or "tense," whereas feeling states such as "calm" or "fatigued" exemplify the deactivation pole and the activation level acquired (activated/deactivated) is dependent on whether or not active coping is required (Seo et al., 2004).

When one's physiological state experiences aggression emotions, O'Leary-Kelly, Griffin, and Glew (1996) note that the emotion *aggression* in organisations may be triggered by negative affect and may be targeted at any object that is available and perceived to be appropriate. Our level of arousal directly affects how one behaves and influences the efficiency of one's behaviour with moderate levels leading to the most efficient behaviour, while levels in the lower and higher areas of arousal cause inefficient behaviour. However, under some conditions, for instance situations in which one is highly skilled or experienced at work, tolerance levels may be higher and arousal suppressed or deactivated, causing tiredness and loss of job satisfaction (O'Leary-Kelly et al., 1996).

The third dimension was inclusive of the *power-control dimension.* This dimension is characterised by appraisals of control, of how powerful or weak a person feels when a particular emotion is experienced and includes feelings of dominance or submission, the impulse to act or withdraw and changes in speech and parasymphatic symptoms (Fontaine et al., 2007). Examples of emotion terms on this dimension included expressions such as *"I experienced the emotion for a long time", "I spoke faster"* and *"I spoke louder"*.

The abuse of power in the workplace, such as workplace bullying (Salin & Hoel, 2011; Vartia, 2001), sexual harassment (Koss, 1987; Rowe, 1996), narcissistic managers (Lubit, 2002; Maccoby, 2004) and power abuse (Greene, 2002; Owen, 2007) can turn a workplace

upside down. Firstly, workplace bullying commonly happens in organisations where dominant subordinate hierarchical relationships exist (McCarthy, Sheehan, Wilkie, & Wilkie, 1998). These acts impact negatively on the organisation (Hoel, Einarsen & Cooper, 2003) and the individual (Einarsen & Mikkelsen, 2003) and can lead to a destructive effect on the physical and mental health of the victim. At the organisational level, culture, organisational structure, and job design are all components that can enhance the climate for workplace bullying (Salin, 2004).

Secondly, sexual harassment does not discriminate between age, status and gender. In the workplace, the most common forms of sexual harassment are verbal forms such as 'sexual jokes', remarks about the body or clothes, staring, whistling and 'unsolicited physical contact', which are frequently reported (Bureau, 1991). The victim will experience increased psychological distress or stress-related illnesses (Crull, 1982).

Thirdly, King (2002) stated that effective leadership becomes central to the operation of the organisation. Narcissistic leaders, who have an overpowering sense of self-importance, coupled with the need to be the center of attention, will often ignore the viewpoints of others within the organisation. Such behaviours may not only harm the leader, but also potential followers and company employees, as well as the organisation (Conger & Kanungo, 1998).

Osgood, May, & Miron (1975) described the power or potency dimension as relating to the degree of power or sense of control over the affect, and helping distinguish emotions initiated by the subject from those elicited by the environment, e.g. contempt versus fear; this has also been called the strength, dominance, confidence, or control dimension (Osgood et al., 1975). Owen (2007) and Greene (2002) came to the conclusion that *power* over others is an inevitable part of leadership, but it also carries with it the risks associated with the misuse or abuse of power.

Therefore, a three-dimensional emotion structure was found after having determined the meaning and content of emotion episodes (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample. It includes a)

the evaluation-pleasantness dimension, b) *the activation-arousal dimension* and c) *the power-control dimension.*

The answer to the question if these two dimensional emotion models, as stated in literature, are sufficient to cover the broad and often complex dynamics of emotion, is certainly no.

Part 2:

What are the different categories of emotion episodes reported in the white Afrikaans-speaking working adult language group in South Africa?

"Things happen to people in work settings and people often react emotionally to these events. These affective experiences have direct influences on behaviours and attitudes" (Weiss & Cropanzano, 1996, p. 11). When one wants to understand emotional episodes at work, one needs to define the emotion episodes. Weiss and Cropanzano (1996) used a definition from the World Book Dictionary - "a happening, especially an important happening" - and from the Random House Dictionary - "something that occurs in a certain place during a particular period of time".

Categories of Episodes for Satisfying Emotions Experienced

Main findings

Clark and Isen (1982) state that individuals tend to seek out situations in which they experience satisfying affect and avoid situations causing less satisfying emotional experiences in the workplace. According to George (1996) individuals in the workplace who experience satisfying emotions tend to have a good attendance record, while those experiencing less satisfying emotions have a high absenteeism rate. Consequently, satisfying emotion episodes initiated by the person's own internal motivation have a greater influence on positive aspects of emotions and their well-being than those arising from external sources and create a satisfying and happy work environment (Gable, Reis, & Elliot, 2000; Reis & Gable, 2003; Ryff & Singer, 1998).

In total 358 emotion episodes were reported, of which 84 were satisfying emotion episodes mentioned by the participants. *Goal achievement, receiving recognition* and *personal incidents* were reported as the most satisfying emotion episodes at work. *Workplace policy* and *subordinal behaviour* were reported as the *least* satisfying emotion episodes that white Afrikaans-speaking working adults experienced at work.

Goal achievement describes situations when job related targets or goals were met (Basch & Fisher, 1998), and recognition gained for that achievement, producing abundant and very satisfying emotions that result in self-actualisation and satisfaction. Collins English Dictionary defines *goal achievement* as something that has been accomplished after much effort and often in spite of obstacles and discouragements. Achievement goals refer to the purposes or reasons an individual pursues an achievement task, most often operationalised in terms of academic learning tasks, although they can be applied to other achievement contexts such as athletic or business settings (Pintrich & Schunk, 1996). According to Urdan (1997) achievement of goals represent an integrated and organised pattern of beliefs about not just the general purposes or reasons for achievement, but also the standards or criteria (the ‘‘target’’) that will be used to judge successful performance.

Basch and Fisher (1998) stated that *receiving recognition* refers to satisfying feedback from managers, supervisors and work colleagues on meeting targets or performing a job to a high standard, or receiving a “pat on the back” for good performance or helpful behaviour. When receiving recognition at work, people feel more accepted and respected by colleagues, and accordingly recognition and reward are accompanied on a social level with social elevation when interacting with colleagues. Half (1994) mentioned that an amount of recognition is relative to job satisfaction. Bialopotocki (2007) defined recognition as an event that occurs when teachers perceive they are being praised for a job well done. According to Blasé and Kirby (1992) receiving recognition leads to increased motivation, increased loyalty, and increased production to achieve expectations of one’s boss and increased use of positive discipline strategies.

Personal incidents reflects an individual’s reaction towards his work or colleagues on satisfying emotional episodes that occur in his/her life. Maslow stated clearly that

employment allows people to become self-actualised (Maslow & Lowery, 1998). Therefore, it is the hierarchy of needs for the individual in a workplace that counts. Satisfying emotion episodes at work have a direct satisfying influence on an individual's behaviour and attitude at work and affect work performance. In turn, this may lead to recognition, reward and ultimately a stable environment within the workplace resulting in uplifting of satisfaction and/or quality of life (Haag, 2005).

Barnett and Hyde (2001) explained that work and the workplace (i.e. job role quality) can potentially enhance family well-being and positive aspects of family life (i.e. family role quality) can spill over into the workplace. Studies done in 2006 that focused on white professional workers have supported the view that work-family experiences affect physical health. Greenhaus, Allen, and Spector (2006) stated that apart from conflict and positive spillover, physical health and emotional reactions to combining work and family roles are also a crucial outcome of interest. Higher positive spillover between work and family has been associated with better self-appraised health (Grzywacz, 2000). Barnett and Baruch (1985) stated in their research work that for a long time researchers have documented the positive effects employment status has on psychological well-being from life satisfaction to decreased incidence of depression (Wethington & Kessler, 1989). Malik, Saif, Gomez, Khan, and Hussain (2010) found that social support is moderately related to employee performance and job satisfaction and has a weak relationship with work-family balance, whereas employee performance is moderately related to job satisfaction.

Frederick Herzberg's (1959) created his two-factor (also known as Motivator Hygiene Theory) to explain satisfaction and motivation in the workplace. This theory states that satisfaction and dissatisfaction are driven by different factors – motivation and hygiene factors respectively. An employee's motivation to work is continually related to the job satisfaction of a subordinate. Motivation can be seen as an inner force that drives individuals to attain personal and organisational goals (Porter, Wrench, & Hoskinson, 2007, p. 133). Motivating factors are those aspects of the job that make people want to perform, and provide people with satisfaction, for example achievement in work, recognition and promotion opportunities. According to Robbins (2001), motivation is a needs-satisfying process, which means that when a person's needs are satisfied by certain factors, the person will exert a

superior effort toward attaining organisational goals. These motivating factors are considered to be intrinsic to the job or the work carried out. Therefore, it is important in order to understand people's behaviour at work; managers or supervisors must be aware of the concept of needs or motives, which will help "move" their employees to act (Schulze & Steyn, 2003).

When one focuses on motivation in the workplace, it is essential because it explains the behaviour and attitude of employees (Rowley, 1996; Weaver, 1998); therefore, people have individual needs, which motivate their actions. Herzberg (1966) concluded his theory by saying that responses about good feelings are generally related to job content (motivators), whereas responses about bad feelings are associated with job context (hygiene factors). Motivators involve factors built into the job itself, such as achievement, recognition, responsibility and advancement, and hygiene factors are extrinsic to the job, such as interpersonal relationships, salary, supervision and company policy (Herzberg, 1966).

The period when individuals felt exceptionally good about their jobs was the most satisfying emotion episode reported and this was attributed to the fact that those individuals experienced great emotion about themselves and from their colleagues. Satisfying emotion episodes revolve around what the *individual* wants at work and it involves *people* (Hart et al., 1993). The final conclusion that can be made is satisfying emotion episodes experienced in the workplace can strongly associated with salary, occupational stress, empowerment, company and administrative policy, achievement, personal growth, relationship with others, and the overall working condition. Increased productivity has been shown to occur when job satisfaction increases (Shikdar & Das, 2003; Wright & Cropanzano, 1997).

Categories of Episodes for Less Satisfying Emotions Experienced

Main findings

In total 267 less satisfying emotion episodes were reported by white Afrikaans-speaking working adults in South Africa. *Behaviour of work colleagues, acts of boss/superior/management* and *task requirement* were the highest reported less satisfying emotion episodes. *Lack of receiving achievement*, w*ellness of colleagues* and *unfairness in*

the workplace were the episodes that were *least* reported in the less satisfying emotion episodes at work.

Haag (2005) mentioned that emotional episodes related to people would be less satisfying to people in general than events related to things at work. *Behaviour of work colleagues* was reported most in this sample group. Less satisfying emotion episodes occur more often when people feel particularly bad about their jobs; problems with colleagues or boss and frequent daily hassles will for example lead to a "not so good" quality of life or lack of well-being. The Random House Unabridged Dictionary defines behaviour as the process of doing or performing something. Work colleagues are defined as the people one works with, a partner in one's office, an associate one works with, or a person who is a member of one's class or profession (Flexner, 1993). Shweder (1991) writes "Emotions have meanings, and those meanings play a part in how we feel". When looking at Shweder's statement about emotions, it is clear that behaviour towards one colleague at work plays a very important roll in daily life.

The emotion episodes *acts of boss/superior/management* was reported the second most. If less satisfying behaviour from one's boss and colleague occurs at work, the employee's well-being will suffer and in turn this will affect work performance. A boss is defined as an employer or a supervisor who makes decisions or exercises authority, gives orders to employees or takes control at work (Flexner, 1993). Management can be characterised as the process of leading ("to lead by the hand") and directing all or part of an organisation. As a result, the boss, superior or management set the tone of the workplace by the way they act towards their employees. Acts of colleagues and acts of management could account for 59% of instances in which employees experienced less satisfying emotion episodes and are likely to contribute to the experience of less satisfying workplace emotions (Basch & Fisher, 2000).

When looking at the third highest episode such as *task requirement,* that may lead to an individual feeling especially bad about their job and result in a tendency to avoid social events. Hackman defined a task as " …assigned to a person (or group) by an external agent or is self-generated, and consists of a stimulus complex and a set of instructions which specify what is to be done vis-à-vis the stimuli" (Hackman, 1970, p. 210). Laplante (2009) stated that

task requirement is determined by the boss or customer. Therefore, by analysing the task requirements, it determines whether the stated requirements are clear or unclear and complete or incomplete. Task requirements might be documented in various forms, such as natural-language documents, use cases, user stories, or process specifications. Task requirement also relates to job demands in the workplace. Jones and Bright (2001) stated that job demands represent the psychological stressors in the workplace. These include factors such as interruption, time pressures, conflicting demands, reaction time required, pace of work, proportion of work performed under pressure, amount of work, degree of concentration required, and the slowing down of work caused by the need to wait for others.

Glomb's (2002) findings suggest that a leading cause of a less satisfying emotion episode in the workplace is interactions with other people. Hart et al. (1993) on the other hand stated that less satisfying emotion episodes are caused by things at work. Greene (2002) and Owen (2007) argue that power can be intoxicating and therefore power has the ability or the potential to influence the behaviour of another person and can lead to less satisfying emotion episodes in the workplace. Huselid (1995) believes that if workers are not motivated, turnover will increase and employees will become frustrated and unproductive.

Lazarus (1966) makes the conclusion that individuals will only feel the same emotion (e.g. satisfying or less satisfying emotions) if their appraisal of an event is the same. Therefore, it is clear that different types of events cause different emotions and may lead to satisfaction or quality of life.

Limitations:

The participants experienced difficulties in providing two (2) emotional episodes that took place in the workplace. The nature of the questionnaire was very time-consuming and some of the participants indicated that they were not fully familiar with the vocabulary emotion terms used in the questionnaire regarding the emotion episodes. Many of the participants reported that this was the first time they had completed such a questionnaire in general, and in particular a questionnaire based on emotions, but they really enjoyed it. During the time of this data collecting, strikes by workers and problems with transport were experienced in

South Africa. This could have led to the high reported rate of negative emotion episodes at work and can be seen as a limitation in the present study.

Suggestions for future research:

Osgood and his colleagues research work from the 50's to the 70's (e.g. Osgood et al. 1975) has confirmed that the three dimensions of evaluation, power and activation the three-dimensional model is for emotional space. Fontaine et al. (2002) and Shaver, Schwartz, Kirson and O'Conner (1987) confirm this with similarity judgments of prototypical emotion terms. Since then many researchers have adopted a two-dimensional model (pleasantness (valence) and arousal (activation), or a rotation thereof (such as positive and negative affectivity, or tense arousal and energetic arousal) in the work done by Yik and his colleagues in 1999. For that reason, Fontaine et al. (2007) argues for an investigation of a multi-componential emotion model. The results of the present study concurred with the earlier findings of Osgood and colleagues (1975), namely a three-dimension emotion structure. By using the Fontaine et al. (2007) approach (feature profile of all six components) a successful investigation determined the meaning and content of emotion episodes among the white Afrikaans-speaking working adults in South Africa. For this reason, to investigate the meaning of emotions in the workplace in other language groups in South Africa would add value to the world of emotions and the bigger picture of Industrial Psychology.

As mentioned earlier, 28 different categories of emotion episodes were reported with satisfying emotion episodes on the one side and less satisfying emotion episodes on the other side. Firstly, it would be interesting to determine which types of emotion episodes are linked to the more satisfying episodes and which are linked more to the less satisfying episodes. The second suggestion is to investigate which emotion episodes relate more to female and which more to male workers, thirdly to determine if age group, gender or marital status play a role in the number of less satisfying emotion episodes experienced in the workplace, and lastly which organisations experienced more satisfying episodes and which less satisfying emotion episodes.

Conclusions and recommendations:

The existing self-report measuring instrument in the workplace focuses on the measurement of a two-emotion dimensional model, namely valence and arousal (Watson & Tellegen, 1985). However, Fontaine et al. (2007) argues for an investigation of a multi-componential emotion model. This study investigated whether in contrast to the currently dominated two-dimensional models, a multiple-dimensional model can describe emotion experiences in the workplace when measured against emotion features. Based on the results of this study a three-dimensional model of emotion was successfully presented, namely a) *evaluation-pleasantness,* b) *activation-arousal* and c) *power-control dimension,* which contained more than the two dimensions (valence and arousal) research normally refers to. The most important conclusion is that the recognised dimensional structure of emotion experience is *not* two-dimensional, as claimed by the widely known two-dimensional models. Therefore, a two-dimensional emotion structure is not enough when investigating all the emotional aspects needed.

Since research attempts to determine the meaning of emotion in the natural contexts in which it occurs, it was also important to investigate the different categories of emotion episodes in the workplace.

As stated, 28 different categories of emotion episodes were reported by 179 participants, and each person reported 2 emotion episodes. Nine (9) of these categories were *satisfying emotion experiences,* with a total of 84 emotion episodes reported, and *less satisfying emotion episodes* were reported 267 times within 19 different categories of emotion episodes.

The result clearly indicates that *Goal Achievement, Receiving Recognition* and *Personal Incidents* were the most reported within the satisfying emotion episodes category. The first two categories' end result is job satisfaction. Job satisfaction has a major effect on people's lives and can benefit it in various ways, such as one's physical health, mental health and social life and the roll-over to life satisfaction. Indirectly it benefits the organisation because satisfied workers will be much more productive, it will affect absenteeism to the better, employees will perform better at work, and they will be retained within the organisation for a longer period. *Personal Incidents* play a major role in any organisation because the workplace

can potentially enhance family well-being and positive aspects of family life will spill over into the workplace. Therefore higher positive spillover between work and family, as reported in this study, has been associated with better self-appraised health and effects on an employee's psychological well-being at home and in the workplace. Goal achievement, receiving recognition and personal incidents are part of those aspects of the job that make people want to perform, and provide people with satisfaction. Therefore, it is important. In order to understand people's behaviour at work, managers or supervisors must be aware of the concept of needs or motives, because this may lead to more satisfying emotion episodes in the workplace.

In the categories of less satisfying emotion episodes, *"Behaviour of Work Colleagues", "Acts of Boss/Superior/Management"* and *"Task Requirement"* were reported most. All three reported categories may be the result of abuse of power in the workplace, such as workplace bullying, sexual harassment and narcissistic managers. Firstly, workplace bullying commonly happens in organisations where dominant subordinate hierarchical relationships exist; therefore it can lead to a destructive effect on the physical and mental health of the victim. Secondly, the power dimension plays a big part in sexual harassment when the perpetrator is satisfied with the response (blamed themselves, pretending to be invisible or keep quiet) of his/her victim after sexual harassment took place at work. It may occur in verbal forms such as 'sexual jokes' and remarks about body and clothes in the workplace. Thirdly, effective leadership is essential to the operation of the organisation and therefore there is no place for narcissistic leaders who have an overpowering sense of self-importance, coupled with the need to be the center of attention and who will often ignore the viewpoints of others within the organisation. Such behaviours harm the potential follower employees, as well as the organisation.

In conclusion the satisfying emotion factors is built into the job itself, such as achievement, recognition, responsibility, and those with less satisfying emotion factors hygiene is extrinsic to the job, such as interpersonal relationships, salary, supervision and company policy.

Therefore, the overall conclusion can be made that organisations have many assets that contribute towards their success. One of the most important assets that any organisation can have, is people. People are considered to be a valuable resource and that resource carries

energy which in turn creates productivity. For this resource to be fully captured and utilised, it is important for that resource to experience goal achievement and positive personal incidents so that well-being surrounds the individual's life at work and releases positive energy. When an unhappy or confrontational relationship exists between a boss or colleague and the employee, it will sap the energy from the precious resource and lead to negative emotions, non-performance and non-achievement contributing to the resultant unsuccessful organisation. The results could be useful to managers who wish to improve the emotional quality of life of their employees and upgrade their environment to a more satisfying place.

It is recommended that similar studies be conducted for males and females separately, to determine similarities and differences. The meaning of emotions in other cultures in South Africa should also be researched and future research should be expanded to include all provinces in South Africa. Investigation into which types of emotion episodes are linked to the more satisfying episodes and which are linked more to the less satisfying episodes, is a recommendation of this research.

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CHAPTER 6

CONCLUSION, LIMITATIONS AND RECOMMENDATIONS

The purpose of this chapter is to provide conclusions regarding the results of the empirical studies of the four research articles. Conclusions are drawn with regard to the research objectives. Furthermore, limitations of the study are discussed. Finally, recommendations for the organisation are made and research opportunities that emanate from this research are presented. The chapter will end with a final conclusion of this thesis and the value added for the field of Industrial psychology.

6.1 CONCLUSION

Research Article 1: The identification of emotion terms used by white Afrikaans-speaking working adults

The main aim of this article was the identification of emotion words of white Afrikaans-speaking working adults. Based on the results of this article, the following conclusions could be made:

- Research aim 1: To conceptualise the classical and prototypical approaches to study the emotion lexicon in the research literature.

The observation is that there are only a small number of basic emotions that are recognised cross-culturally: *happy, sad, angry, afraid, surprised,* and *disgusted*. All other emotions, frequently labelled "complex emotions", are either treated as being blends of the basic six or being culture specific (Ekman & Friesen, 1969; Prinz, 2004). To enable the understanding, identification and listing of the unique emotion terms for a culture group depends on the emotional self awareness of that culture group. All cultures have a small number of emotions or emotion words in common, but every culture has multiple ways of enhancing these, sometimes quite differently.

Researchers have adopted many approaches in trying to define emotions, with varying degrees of achievement (Ekman & Davidson, 1994; Rosch, 1975). Along all the definitions, the classical approach (Markman, 1989) and the natural (prototype) approach are two approaches that stand out. The classical approach on the one end defined a concept by a set of rigidly necessary and sufficiently prescriptive conditions (Armstrong, Gleitman, & Gleitman, 1983). Markham (1989) stated that the classical approach has necessary and sufficient criteria, with clear-cut boundaries between neighboring categories, and all category members have equal status. The prototypical approach, on the other end, assumes that exemplars of a concept may vary in the degree to which they share similar or common properties (Berger & Luckmann, 1966; Blumer, 1969; Garfinkel, 1967; Goffman, 1959). The prototype approach which allows for fuzzy boundaries (where people rely more on their experience on what they feel best represents a category within their specific culture) (Rosch, 1973). Therefore, the prototypical approach assumes that exemplars of a concept may vary in the degree to which they share similar or common properties.

When one looks at the two ends trying to define emotions, it is crystal clear that emotions cannot always be defined in classical categories, because it is evident that the classical approach is set in stone, with very clear descriptions and sets of boundaries with no leeway for deviation. For that reason the prototypical approach, which allows for fuzzy boundaries where one relies more on one's experience with what one feels best represents a category within a specific culture (Rosch, 1973), is more suitable. Furthermore, Rosch's (1978) prototype approach is the most favourable for research purposes, because it addresses both the contents of individual categories (i.e. the category of sadness episodes) and the hierarchical relations among categories (i.e. loneliness is a type of sadness, which itself is a type of negative emotion).

- Research aim 2: To report on examples of prototypicality studies as indicated by the research literature.

Searching for an answer on what is an emotion, researchers Rosch (1975) and Fehr and Russell (1984) address this question empirically by using the prototype theory. A prototype is a cognitive concept that provides a way of organising data, in the minds of individuals or

groups of people, into the best example of a concept (Rosch, 1973). The advantage of investigative constructs as prototypes is that prototypes reflect how people think and talk about a construct and therefore which are mental representations of categories of objects, events and concepts like emotion (Rosch, 1973).

A successful study was conducted by Shaver, Schwartz, Kirson, & O'Connor (1987) proposed a structure based on prototype theory to describe the hierarchical cluster analysis of sorting of 135 emotion terms drawn from the emotion lexicon. Shaver et al. (1987) reported a solution consisting of six "fuzzy" categories, each containing both general and specific terms belonging to a single emotion family, and each characterised by a single basic level term: *love, joy, surprise, anger, sadness* and *fear.* In another study (prototypicality rating), the subjects directly rated how good an example of emotion each of the 20 target emotions is. *Love, hate, anger, sadness, happiness, joy* and *fear* were regarded as extremely good examples , while *worry, disgust, awe, pride, calmness, boredom* and *respect* were regarded as extremely poor examples of emotions (Fehr & Russell, 1984).

The conclusion was drawn that the prototype approach can be used to understand the everyday use of natural language concepts.

- Research aim 3: To determine the emotion terms that are used in a white Afrikaans-speaking working adult group.

Identifying of emotion terms already started long before the eighties (Kleinginna & Kleinginna, 1981a, 1981b), when asking the question whether some emotions are more basic than others and if so, which ones. Emotion terms are often used in daily oral communication and in psychological assessment instruments to report on psychological experiences (Ekman, Friesen, & Ancoli, 1980; Gross & Levenson, 1993). The emotion terms that were reported by white Afrikaans-speaking working adults with the highest frequency, as identified during the free listing task, were *to be happy (gelukkig wees), be sad (hartseer wees), love (liefde), anger (kwaad)* and *hateful (haatlik).* The emotion terms with the lowest scores, as identified during the free-listing task, were uncomfortable *(ongemaklik), painful (seer), be hurt (seergemaak wees), sympathetic (simpatiek)* and *shout/yell (skreeu).*

- Research aim 4: To determine the most and least prototypical emotion terms that are used in a white Afrikaans-speaking working adult group.

According to Harre (1987) and Schachter and Singer (1962), people's experience of an emotion can depend on how they perceive themselves in terms of emotion words and, more importantly, how they define emotion terms such as anger, love or happiness. The prototypicality rating task results reported that the five prototypical terms with the highest scores in Afrikaans were *nice (lekker), fed-up/had enough (gatvol/"genoeg gehad"), loveable, (liefdevol), anger (kwaad)* and *to be scared (om bang te wees).* The five (5) least prototypical terms from the list generated in the free listing task were *unstable (onvas), bashfulness (skugterheid), captivation (geboeidheid), envy (naywer)* and *delight (opgetoënheid).* These emotion terms corresponds with lists of basic emotion terms found in the literature, which are happiness, anger, sadness, love, fear and hate (Bretherton & Beeghly, 1982; Ekman, 1984; Epstein, 1984; Izard, 1977).

According to Fehr and Russell (1984), and Shaver et al. (1987) this prototype approach is necessary to identify the emotions which are a true representation of typical emotion terms specifically used by a culture group. Therefore, the prototype approach to emotion knowledge promises to add in numerous ways to the understanding of emotion representation in everyday life.

- **Final conclusion of this article:**

The information obtained in this research revealed that the emotion terms *nice (lekker), fed up/had enough (gatvol/"genoeg gehad")* and *loveable (liefdevol)* are at this stage unique to the white Afrikaans language group. These emotion terms had not been reported in any previously conducted prototypical studies. Thus, by using the prototype approach, these emotion terms proved to be culturally specific and would not be considered as classical emotions.

The Oxford Concise Dictionary expands on the emotion term *nice*: pleasant, enjoyable or attractive; a nice day/a nice smile/a nice place or nice weather (Fowler, 2003). The definition

of the emotion term *fed up/had enough* is when you are fed up with something, you have had enough of it and want it to stop right away; you are sick of it (Oxford Dictionary). The Oxford English Dictionary explains *loveable* as deserving of being loved, likeable, attractive and pleasing. This emotion term means to have feelings of love or affection for somebody, or, furthermore, to find somebody pleasant and to enjoy being with them or to love somebody very much and be loyal to them (Fowler, 2003). All three of these words are frequently and readily used in the everyday lives of the Afrikaans-speaking language group.

Therefore, by identifying the emotion terms of the Afrikaans language culture it enabled the structure of the psychological conditions to which such emotion terms apply to this specific group to be discovered. The results contribute to a cross-cultural understanding of the emotion concepts within the Afrikaans-speaking language groups in South Africa.

Research Article 2: The cognitive structure of emotion terms of white Afrikaans-speaking working adults

The main aim of this article was to investigate the cognitive structure of emotion terms of white Afrikaans-speaking working adults and based on the results of this article, the following conclusions could be made:

- Research aim 1: To conceptualise emotion dimensions and the interplay of culture and emotion as indicated by the research literature.

One of the most important ways to study emotions is through emotion terms. Emotion terms are not necessarily the same for different cultural groups. There is an important debate between relativists and universalists, with the former stating that emotion words are culture-specific constructions, and the latter that emotion words refer to universal emotion processes (Russell, 1983; Shaver et al., 1987). Therefore, *"In order to better understand the universals of human thought processes, one must also study the ways in which people can differ"* (Casasanto, 2008, p. 76).

There have been different definitions of culture, with similarities as well as differences (Berry, Poortinga, Segall, & Dasen, 1992). Matsumoto and Yoo (2006) define culture simply as *a shared system of socially transmitted behavior that describes, defines, and guides people's ways of life*. One uses culture to explain similarities within and differences between groups of people (Tooby & Cosmides, 1992). Oatley and Jenkins (1996) observed that the face reveals emotion in a way that is universally understood. Happiness, surprise, fear, anger, contempt, disgust and sadness are recognised from facial expressions by all human beings, regardless of their cultural background. Maybe for this reason, Oatley and Jenkins (1992, p. 67) observed, "By far the most extensive body of data in the field of human emotions is that on facial expressions of emotion" and therefore Oatley and Jenkins (1996), Izard (1971) and Ekman, Friesen and Ellsworth (1972) agree that the face reveals emotion in a way that is universally understood. Darwin (1965) and Eibl-Eibesfeldt (1972) argued that facial expressions are innate, evolved behaviour and Mead (1975) argued that facial expressions are instead like a language, socially learned, culturally controlled, and variable in meaning from one setting to another. The conclusion can be drawn that cross-cultural emotions and universality are significant and very complex.

Therefore, by making use of the similarities and differences which people in a common culture share, emotion dimensions can be determined within specific cultural groups (Shaver et al., 1987). Structural analyses of emotion terms, like factor analysis and multidimensional scaling, usually result in a two- or three-dimensional structure (Russell, 1991). The first dimension is always a *pleasantness or valence dimension*, where emotion terms can be systematically ordered on a positive-negative dimension (Watson & Tellegen, 1985). Three other dimensions that often emerge are *activation* (active-passive) (Larsen & Diener, 1992; Thayer, 1996) or *arousal* (high-low) (Larsen & Diener, 1992) and *power* (strong-weak) (Larsen & Diener, 1992). Russell and Feldman Barrett (1999) highlighted that one dimension is rarely enough to capture all of the important aspects of the space, and additional dimensions (e.g. dominance, affiliativeness) can be interpreted as cognitive construals of the causes and consequences of the affect state.

Feldman Barrett and Russell (1998), Russell and Feldman Barrett (1999) and Feldman Barrett and Fossum (2001), maintained that there are only two principal emotion dimensions

to the structure of emotions, namely pleasantness and arousal. Watson and Tellegen (1985) stated that a two-dimensional structure is currently the most widely in use. Another two-dimensional structure, described by Russell in 1980 and 1983, is called a two-dimensional circumplex model of emotion terms. This dimension stated very high or very low values on one dimension (e.g. arousal). A third dimension such as potency or dominance goes together with the two-dimensional family emotion structure (Averill, 1975; Bush, 1973).

However, Osgood identified a three-dimensional structure in the emotion domain that is suggestive of the Evaluation-Potency-Activation (EPA) dimensions in the connotative or affective meaning of words (Osgood, May, & Miron, 1975). These three dimensions of affective meaning were found to be cross-cultural universals in a study of dozens of cultures (Osgood et al., 1975; Osgood, Suci & Tannebaum, 1957; Snider & Osgood, 1969). Various studies were successfully conducted by Osgood and his colleagues. The semantic differential today is one of the most widely used scales in the measurement of attitudes (Osgood et al., 1957).

International studies have confirmed (Fontaine, Scherere, Roesch, & Ellsworth, 2007) the universal representation of three emotion dimensions in the cognitive structure of emotions across different cultures. Russell (1989), Daly, Lawrence and Pollivy, (1983) as well as Havlena and Hollbrook (1983) mention that much of the recent evidence supports a three-dimensional approach for accurately assessing emotional response and that models with less than three dimensions may not accurately assess emotional response.

- Research aim 2: To report on examples of similarity rating studies as indicated by the research literature.

The similarity rating task was put into practice to define emotions consistently in emotion research and investigate the cognitive structure it consists of (Scherer, 2005). The information inherent in the emotion itself plays a major role in determining the nature of an affective cognitive structure. An emotion such as love, happiness or anger will, for example, link to a picture or idea to form an affective cognitive structure (Izard, 1992; Tomkins, 1962) and therefore the information in the emotion provides a key to understanding the linkages

between emotion and cognition. The cognitive theory states that the brain is the centre of emotions. It mainly focuses on the “direct and non-reflective” process (Sander, Grandjean, & Scherer, 2005) called appraisal, by which the brain judges a situation or an event as good or bad. In this regard, Shaver and his colleagues realised the importance of this research method when they put it into practice.

In a study conducted by Shaver, Wu, and Schwartz (1992) a similarity sorting task was carried out. The participants were asked to put emotion terms (printed on cards) with a similar meaning together in the same category, and those with different meanings in separate categories (making as few or as many categories as wished). Statistical analysis on the matrix of similarity rating show a good fit for a three-dimensional structure (labelled as evaluation, potency and arousal).

The categorisation of emotion terms study was conducted in 2002 by Fontaine, Poortinga, Setiadi, and Markam. The cognitive structure of emotions was investigated by means of similarity sorting of the emotion words. Each participant received a set of cards and was asked to sort the terms in categories of similar emotions. The instructions, which mentioned that there were no rules regarding the number of categories, were taken from Shaver et al. (1987). In the Indonesian and Dutch samples the three dimensions could in both cases be interpreted as pleasantness or evaluation (separating positive from negative emotion terms), dominance or potency (separating anger terms from fear and sadness terms), and arousal or activation (separating sadness from fear and anger terms). The results report the same three dimensions of pleasantness, dominance and arousal adequately. When one wants to understand the cognitive structure of emotions, the similarity sorting task is the answer.

- Research aim 3: To conceptualise the white Afrikaans-speaking language group in South Africa as indicated by the research literature.

South Africa has been referred to as the 'rainbow nation', a title which illustrates the country's cultural diversity. The population of South Africa is one of the most complex and diverse in the world. Of the 45 million South Africans, nearly 31 million are Black, 5 million White, 3 million Coloured and one million Indian (Greeff, 2007).

The first person recorded to have identified himself as an *Afrikaner* was Hendrik Biebouw, who, in March 1707, stated *Ik ben een Afrikander* (I am an African), and did not want to leave South Africa (Heese, 1971). And some of the first written work in Afrikaans used the Arabic alphabet in the work *Bayaan-ud-djyn* written by Abu Bakr (Giliomee, 2003).

In the late 19th century, Afrikaans was considered a Dutch dialect, recognised as a distinct language and was fast gaining equal status with Dutch and English as an official language in South Africa in terms of Act 8 of 1925. Although the history of Afrikaans has its roots in seventeenth century Dutch, it has been influenced by many languages, including English, Malay, German, Portuguese, French and some African languages. The Afrikaans language changed over time from the Dutch spoken by the first white settlers at the Cape (Giliomee, 2003), and was mainly the spoken language for people living in the Cape (Giliomee, 2003). It is the primary language used by two related ethnic groups in South Africa, the Afrikaners and Coloureds, also referred to as *kleurlinge* or *bruinmense* (the latter including Basters, Cape Malays and Griqua) (Giliomee, 2003).

Davis (1975) noted that religion plays an important part in the lives of most Afrikaners. The Afrikaners are considered to be 100% evangelised and 99% are cultural Christians. Almost 50% of these are considered Evangelical. Geographically, Afrikaans is the majority language of the Western region (one-third of South Africa known as the Northern and Western Cape) and spoken at home by 69% and 58% South Africans respectively. It is also the largest first language in the adjacent southern third of Namibia (Hardap and Karas, where it is the first language of 44% and 40% people respectively). It is the most widely used second language throughout both of these countries for the population as a whole, although the younger generation has better proficiency in English (Giliomee, 2003).

Considering that Afrikaans is the third biggest language group in South Africa, but still a relatively young and unknown cultural group and there is little or no data about the Afrikaans-speaking emotion terms available.

- Research aim 4: To determine the reliability of measures of a similarity rating task.

With regard to the similarity rating task (in the form of eight versions of the measurement instrument - comparing each of the 80 terms to one another), it was highly reliably done with alpha coefficients ranging from 0,93 for version 8 to 0,96 for version 4. All the alpha coefficients were higher than the guideline of $\alpha > 0, 70$. The conclusion can thus be drawn that the similarity rating task using 80 emotion terms is a reliable scientific method that can be used in future cross-cultural emotion studies.

- Research aim 5: To determine if the cognitive structure in a white Afrikaans-speaking working adult sample includes the evaluation-pleasantness dimension.

From the cognitive structure of the white Afrikaans-speaking working adults, the *evaluation-pleasantness dimension* emerged as the first dimension. This dimension evaluates the pleasantness versus the unpleasantness of an emotion. This dimension is characterised by intrinsic appraisals of pleasantness and goal conduciveness and action tendencies of approach versus avoidance (Fontaine et al., 2007). Examples of emotion terms such as *anger (kwaad), fear (vrees), anxiety (angs), happiness (gelukkig)* and *love (liefde)* appeared. All known human languages have words to communicate pleasure or displeasure (Wierzbicka, 1992), and the pleasure-displeasure dimension is pancultural in emotion lexicons (Russell, 1991).

A further investigation on the dimension indicated unpleasant emotions such as *anger (kwaad), fear (vrees)* and *anxiety (angs)* versus pleasant emotions such as *happiness (gelukkig)* and *love (liefde).* Bagozzi, Wong & Yi (1999) and Heine, Lehman, Markus and Kitayama, (1999) suggested that culture influences the relation between pleasant and unpleasant emotions. Pittam (1994) mentioned that the pleasure dimension refers to how positive or negative the affect is; this is also referred to as the evaluative, pleasantness, valence, valency, hedonic valence or evaluation dimension (Pittam, 1994).

- Research aim 6: To determine if the cognitive structure in a white Afrikaans-speaking working adult sample includes the activation-arousal dimension.

From the cognitive structure of the white Afrikaans-speaking working adults, the *activation-arousal dimension* emerged as the third dimension. According to Fontaine et al. (2007) this *arousal* dimension is characterised by sympathetic arousal, e.g. rapid heartbeat and readiness for action. Examples of emotion terms on this dimension included *contempt* (minagting), *nervousness* (senuweeagtigheid), *confusion* (verwarring), *hysteria* (histerie), *doubt* (twyfel) and *insult* (belediging). *Contempt* (minagting), *nervousness* (senuweeagtigheid), *confusion* (verwarring), *hysteria* (histerie), *doubt* (twyfel) and *insult* (belediging) are examples of high arousal emotion terms, and *peacefulness* (rustigheid) is an example of a low arousal term. The *arousal* dimension refers to the degree of intensity of the affect and ranges "from sleep to frantic excitement" (Pittam, 1994). It is also referred to as the activity, activation, intensive or intensity dimension. According to Osgood et al.'s theory (1957) the arousal dimension refers to how excited or apathetic the emotion is.

The *arousal* dimension is also called activation. Cowie (2000) stated that arousal expresses the degree of excitement felt by people, from calm to exciting and Barrett (1998) defined *arousal* as a bodily activation. Theoretical models claim that not only valence but also the degree of activation associated with a stimulus, the so-called arousal dimension, plays an important role in affective processing (Lang, Bradley, & Cuthbert, 1997).

- Research aim 7: To determine if the cognitive structure in a white Afrikaans-speaking working adult sample includes the power-control dimension.

From the cognitive structure of the white Afrikaans-speaking working adults, the *power-control dimension* emerged as the second dimension. This dimension is characterised by appraisals of control and how powerful or weak a person feels when a particular emotion is experienced. This includes feelings of dominance or submission, the impulse to act or withdraw, and changes in speech and parasymphatic symptoms (Fontaine et al., 2007). Examples of emotion terms on this dimension included emotional (emosioneel), hate (haat), jealousy (jaloers), shame (skaamte) and sympathy (simpatie). Emotion terms that were indicative of weakness included sad (hartseer) and sorrow (verdriet) compared with emotion terms more indicative of dominance – jealously (jaloesie) and revulsion (walging).

Russell and Mehrabian (1974) defined this dimension as more of a mere intensity of feeling and stated that a 'powerful' emotion can be easily misconstrued as merely a 'strong' emotion, rather than an emotion of strength. Averill mentioned that the potency dimension may be separable into two dimensions: control (feelings that involve internal control, self-control, deliberateness and intentionality versus those that do not) and depth (feelings that have a deep, powerful or profound impact versus those that do not) (Averill, 1975).

- **Final conclusion of this article:**

The existing affect has been described with a option of two dimensions and structures, i.e. Russell's (1980) circumplex, Watson and Tellegen's (1985) positive and negative affect, Thayer's (1986) tense and energetic arousal, and Larsen and Diener's (1992) eight combinations of pleasantness and activation. These two dimensions and structures measure a person's experiences and, thereafter, report these. If it is without a doubt as stated in literature, that there are three and not *only* two emotion dimension structures, researchers are missing out on a bigger picture for not drawing on the experience of emotion sufficiently. Russell (1989), Daly et al. (1983) as well as Havlena and Hollbrook (1983) support the argument formulated in this article by mentioning that much of the recent evidence supports a three-dimensional approach for accurately assessing emotional response, and that models with fewer than three dimensions may not accurately assess emotional response.

The start of multiple emotion dimension models were reported by Osgood and colleagues in 1975, who identified a three-dimensional structure in the emotion domain that is suggestive of the Evaluation-Potency-Activation (EPA) dimensions in the connotative or affective meaning of words (Osgood et al., 1975). However, in recent studies the sufficiency of two-dimension models to comprehensively investigate emotions was questioned. The three-dimensional emotion model of Osgood was replicated in cross-cultural similarity sorting studies by Fontaine et al., in 2002.

From the results of the Multidimensional Scaling (similarity rating) a three-dimensional cognitive emotion structure (*evaluation-pleasantness, power-control* and *activation-arousal dimension)* was identified and interpreted as representative of the white Afrikaans speaking

working adult group. Therefore, the final conclusion can be made that the results represent a cognitive emotion structure in a white Afrikaans-speaking working adult population in South Africa and the similarity sorting studies also indicate the importance of studying emotions in specific cultural contexts. Studying emotion in different cultures is especially relevant in a country such as South Africa that has a diverse variety of cultures and eleven official languages.

Research Article 3: The meaning of emotion according to the Componential Emotion Theory among white Afrikaans-speaking working adults in South Africa. Approach: A Meaning Grid Approach

The main aim of this article was to investigate the meaning of emotion according to the componential emotion theory among white Afrikaans speaking working adults in South Africa. Based on the results of this article, the following conclusions could be made:

- Research aim 1: To conceptualise how emotions are defined in the literature research.

Emotion terms are used both in daily language and in psychological assessment instruments (Jung, 1971; Myers, 1995). But still is there a strong disagreement about the definition of emotions (Fehr, Russell, & Ward, 1982; Scherer, 2005). The concept emotion is clarified in the Random House Unabridged Dictionary (Flexner, 1993) as an affective sense or state of consciousness in which the basic human emotions of joy, sorrow, fear, hate, or the like are experienced. The Oxford Concise Dictionary expands this definition and in turn defines an emotion as an agitation of mind, feeling and excited mental state (Fowler, 2003). The Chambers Dictionary, in its turn, states that emotions are a moving of the feelings, agitation of mind, one of the three groups of the phenomena of the mind - feeling; cognition and will, and distinguished from cognition and will (Giddie & Liddell, 1938). These dictionary definitions indicate the multitude of ways in which different people view the concept of "emotion" and the different shades of understanding, interpretation and description which the term "emotion" evokes, even among lay people. In the emotion literature there is a huge divergence about what emotions are (Kleinginna & Kleinginna, 1981a, 1981b). In their

research articles, Kleinginna and Kleinginna had already reviewed more than one hundred definitions by 1981.

When investigating the history of what emotions are, William James gave an authoritative answer in the year 1884, but only succeeded in starting an ongoing debate (Niedenthal, Barsalou, Winkielman, Krauth-Gruber, & Ric, 2005). Different researchers have different answers as to what exactly emotions mean (Scherer, 2005). Izard (1977), Plutchnik (1980) and Scherer (1984), described emotion as a psychological construct consisting of cognitive appraisal, physiological activation, motor expression, motivation, behavioural readiness, and subjective feelings. Russell (1991) confirmed that these are all facets of the emotional concept. Because of the subjectivity and ambiguity surrounding the meanings, the interpretations, the experiences, the observations and the behaviours motivated by "emotions", however, any study of the phenomenon must take notice of several fundamental problems with which researchers of the concept are faced. Most research in the past on the meaning of emotion has focused on the degree to which emotion terms register on a positive/negative affectivity continuum (Judge, Thoresen, Bono & Patton, 2001; Zautra, Affleck, Davis, Tennen, & Fasman, 2005).

Therefore determining the meaning of emotion terms becomes important to gain an understanding of what is measured by emotion instruments (Ekman & Davidson, 1994; Ekman & Rosenberg, 1997; Feldman, 1995; Watson & Greer, 1983).

- Research aim 2: To present the different components included in the componential emotion theory to study the meaning of emotion based on the research literature.

Frijda (1986), Lang (1977), Lazarus (1991), Ortony and Turner (1990), and Scherer (1984) do not consider emotions any longer as unitary and elementary entities, but rather view emotions as multi-componential phenomena. It is essential that an emotion process should consist of concurrent changes in several different components. The emotion process is defined as a complex of changes in different subsystems of the persons functioning. The emotion process includes the following components: *appraisal component; motor expression component (include facial and vocal expressions); neuro-physiological component;*

motivational component and *regulation component* (Frijda, 1986; Lang, 1977; Lazarus, 1991; Ortony & Turner, 1990; Scherer, 1984) to study the meaning of emotion.

Therefore, the componential emotion theory offers a framework (different components) in which emotions can be investigated with regard to situational circumstances as well as the synchronised activity it causes in each of the components of emotion. The components involved consist of the following: *Appraisal component*: The appraisal component links emotional responses during an emotional episode to external circumstances and personal goals and beliefs (Smith & Lazarus, 1993). Smith and Kirby (2001) discuss two important requirements of any appraisal theory. Firstly, an appraisal theory should describe the dimensions along which they occur. Secondly, any appraisal theory must be able to describe the cognitive processes that underlie the application of these dimensional evaluations. *Motor expression component*: The motor expression component includes facial and vocal expressions that are experienced during an emotional episode: *Facial expression*: Peoples' faces express a large variety of emotions that include, but are not limited to, the basic emotions of anger, fear, love, sadness and anxiety and are regularly described as the observed facial expressions that they convey (Ekman, 1979). *Vocal expression*: Vocalisation of emotions is another means of expressing felt emotions. Scherer says emotions are associated with voice and speech behaviours and those emotions may be recognised quite accurately from voice and speech samples (Scherer, Wallbott, & Summerfield, 1986). *Neuro-physiological component*: Every bodily change is allegedly perceived as soon as it occurs during an emotional episode (James, 1884). One cannot abstract from an emotion all the feelings of its bodily symptoms and find anything left behind other than a cold and neutral state of intellect. James's theory was that bodily sensations occur prior to emotional feelings (James, 1884). *Motivational component*: Frijda (2007) stated that emotions play an essential role in motivation and motivational processes during emotional episodes. Recent research suggests that a positive affect may increase motivation (Erez & Isen, 2002), and likewise a negative affect may decrease motivation. *Regulation component*: Emotional regulation refers to the processes related to influencing emotions that are experienced during an emotional episode, the situations under which they are experienced, and how, and if, an individual expresses such emotions (Gross, 1999).

It is clear that these components go beyond a mere representation of just subjective experiences. The componential emotion approach clearly outlines the concept of emotions and it is not only about a specific component but about all emotions as an entity in response to a specific event (Fontaine et al., 2007).

- Research aim 3: To indicate how the meaning of emotion can be studied through a componential emotion approach lens.

Fontaine et al. (2007) followed an approach that studied the meaning of emotion in different cultural groups in the context of 144 emotion features using a componential emotion theory approach. Fontaine et al. (2007) argue in this groundbreaking research that was published in *Psychological Science* that two-dimensional models of emotions are not sufficient to study the meaning of emotions. Therefore, the componential emotion theory approach was followed as method by Fontaine et al. (2007) in a student population study of three language groups, namely Dutch-, English- and French-speaking people to investigate the meaning of emotion structures in these languages groups. According to Fontaine et al. (2007) this approach allows for an empirical and theoretical method to study the meaning of emotions across cultures. The 144 emotion features were derived from a broad range of very diverse emotion theories and literature, such as the appraisal theory of Scherer (2001), the psycho-physiological emotion literature (Stemmler, 2003), the action-tendency theory of Frijda (Frijda, Kuipers, & Ter Schure, 1989), the current-affect theory of Russell (Yik, Russell, & Feldman-Barrett, 1999) and the expression-regulation theory of Ekman and Friesen (1969).

- Research aim 4: To determine if the emotion terms as featured in the Meaning Grid are reliable and if it will denote satisfactory alpha coefficients when measured against results of previous Meaning Grid studies: 0,80 and higher.

With regard to the reliability of this study, the reliability was indicative of satisfactory alpha coefficients. Cronbach alpha coefficients that were the highest were disgust (afkeur) 0,95; pleasure (plesier) 0,94; stress (stres) 0,92; happiness (blydskap) 0,91; joy (vreugde) 0,91; fear (bang) 0,91; anger (angstig) 0,91; and hate (haat) 0,90. The terms with the lowest alpha coefficients were compassion (medelye) 0,79; pride(trots) 0,79 and contempt (minagting)

0,74. Out of the 24 terms of the Meaning Grid instrument, 8 terms were above 0,90, 13 were between 0,80 and 0,89. Only 3 terms were between 0,74 and 0,79.

Similar studies were conducted in Geneva, Belfast/York and Gent, With the reliabilities of the study in Geneva, the terms with the lowest alpha coefficients were contempt, disgust and compassion with 0,87 and in the study of Belfast/York compassion was the lowest alpha coefficient with 0,88. Cronbach alpha coefficients that were the highest of the study in Gent were anger (0,97), joy (0,97), happiness (0,98), pleasure (0,98) and contentment (0,98). Those in the Geneva study were anger (0,96), anxiety (0,96), joy (0,97), pleasure (0,96), pride (0,96) and shame (0,96), while the highest recorded in the Belfast/York study were happiness (0,97), pleasure (0,97), disgust (0,96), stress (0,96), despair (0,96), joy (0,96), contentment (0,96) and being hurt (0,96). In all four studies, the emotion term *pleasure (plesier)* was ranked high (South Africa: 0,94; Gent: 0,98; Geneva: 0,96 and Belfast/York: 0,97).

The terms with alpha coefficients lower than 0,80 were compassion (medelye) 0,79; pride (trots) 0,79 and contempt (minagting) 0,74. A possible explanation may be that these emotion terms are not prototypical in Afrikaans. The conclusion can be drawn that the Meaning Grid proved to be reliable and that although the alpha coefficients were not consistently as high as those found in international studies (Fontaine et al., 2007), it was still satisfactory.

- Research aim 5: To determine if the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the evaluation-pleasantness dimension.

From the componential emotion theory approach, the *evaluation-pleasantness dimension* was reported as the first dimension and it explained 43,0% of the variance. Research using the dimension perspective has generated interesting results and enables a variety of measurement techniques to be utilised to gather detailed data using both self-report and observation measures. For example, language itself and specifically language used to describe emotion can be characterised in terms of evaluation (Russell, 1991; Wierzbicka, 1992). Examples of emotion features on this dimension included *wanted the ongoing situation to last or to be*

repeated (emotion component: action); wanted to sing and dance (emotion component; action) and *felt good (emotion component: feelings).*

This dimension is the systematic acquisition and assessment of information to provide useful feedback about some object and was also identified by Fontaine et al. (2007). Research using the dimension enables a variety of measurement techniques to be utilised to gather detailed data using both self-report and observation measures. For example, language itself and specifically language used to describe emotion can be characterised in terms of evaluation (Russell, 1991; Wierzbicka, 1992). Subjective well-being increases with the frequency of pleasant emotions and decreases with the frequency of unpleasant emotions. As a result, frequency judgments of emotions are important indicators of subjective well-being (Diener, 1984; Diener, Sandvik, & Pavot, 1991; Diener, Smith, & Fujita, 1995).

- Research aim 6: To determine if the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adult sample includes the power-control dimension.

From the componential emotion theory approach, the power-control dimension was reported as the third dimension and it explained 8,2% of the variance. This power dimension relates to the degree of power or sense of control over the affect, and helps distinguish emotions initiated by the subject from those elicited by the environment, e.g. contempt versus fear; this has also been called the strength, dominance, confidence, or control dimension (Osgood et al., 1957; Russell & Mehrabian, 1974). Examples of emotion features on this dimension included *increased the volume of voice (emotion component: voice), showed tears (emotion component: face)* and *had a feeling of a lump in throat (emotion component: body).*

The power-control dimension has been popular since Osgood et al. (1957) research work on the general analysis of affective structure in the meaning of lexical items. In particular, it is an extremely useful way to distinguish the emotions of fear and anger. The power dimension is defined and distinguished from mere intensity of feeling. A ‘powerful’ emotion can be easily misconstrued as merely a ‘strong’ emotion, rather than an emotion of strength (Russell & Mehrabian, 1974). Russell (1980) stated that the power dimension refers to the degree of

power or sense of control over the emotion. Therefore, the power dimensions of any emotion can help one to recognise and adapt to emotionally-driven urges and impulses. This dimension may be seen as a dimension that involves cognitive appraisal of an individual's coping potential, or power, in a particular situation, and it has been variably referred to as potency, dominance, or control (Lazarus & Smith, 1988). According to Smith and Ellsworth (1985) it has been suggested that this is an important dimension for the differentiation of negative emotions.

- Research aim 7: To determine if the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample includes the activation-arousal dimension.

From the componential emotion theory approach, the second factor was an arousal/unpredictability dimension and it explained 11,0% of the variance. This means that the second factor comprised both arousal and unpredictability. The arousal part of the third emotion factor, according to the principal component analysis, is indicative of sympathetic arousal, such as rapid heartbeat and readiness for action. It opposes emotions such as stress, anger, and anxiety to disappointment, contentment, and compassion (Fontaine et al., 2007). Examples of emotion features on this dimension included *produced abrupt body movements (emotion component: gesture), felt breathing getting faster (emotion component: body)* and *opened her or his eyes widely (emotion component: face).* A further investigation on the component loading on this factor includes high arousal emotions such as hate, irritation, anger and jealousy versus low arousal emotions such as sadness, shame, being hurt and despair.

Barrett (1998) defined bodily activation as arousal, which Duffy (1962) and Humphreys & Revelle (1984) defined as the level of alertness or activation ranging from extreme wakefulness to extreme drowsiness. Olson & Ray (1985) believed arousal to be a complex process, rather than a unitary one, requiring multiple physiological measures. According to the principal component analysis, the arousal factor is indicative of sympathetic arousal, such as rapid heartbeat and readiness for action. It opposes emotions such as stress, anger, and anxiety to disappointment, contentment, and compassion (Fontaine et al., 2007).

- Research aim 8: To determine if the meaning of emotion (as measured in the context of the componential emotion theory approach) in a white Afrikaans-speaking working adults sample includes the unpredictability dimension.

From the componential emotion theory approach, the second factor was an arousal/unpredictability dimension and it explained 11,0% of the variance. This means that the second factor comprised both arousal and unpredictability. Scherer (2003) stated that although unpredictability has not emerged in most previous general studies of the dimensions of emotion, uncertainty is an important dimension in many appraisal theories (Ellsworth & Scherer, 2003). According to Fontaine et al. (2007) this arousal and unpredictability dimension is characterised by sympathetic arousal, e.g. rapid heartbeat and readiness for action. The unpredictability dimension monitors the input information for the amount of unexpected changes or the discrepancy between the expected and the observed. However, meaningful differentiations emerge among these other emotions as well; for example, fear is distinguished from stress and disgust from contempt (Fontaine et al., 2007). Surprise is distinguished from all other emotions on this dimension (Fontaine et al., 2007). The best interpretation of this dimension seems to be the sense in which the event that triggered the emotion was predictable or not. For instance, the predictability of someone's insulting behaviour makes one sad.

- **Final conclusion of this article:**

This study followed an approach that investigated the meaning structure of emotion in the sample group in the emotion features (all that emotions are made up off) using a componential emotion theory approach. Fontaine et al. (2007) argue that emotion meaning as more than only two dimensions. The approach postulated by Fontaine et al. (2007) (based on the theory of Scherer, Wranik, Sangsue, Tran, & Scherer, 2004) was tested in a student population of three language groups, namely Dutch-, English- and French-speaking students. According to Fontaine et al. (2007) this is an empirical and theoretical method to study the meaning of emotions across cultures. The results confirm that within the white Afrikaans speaking working adult language group, a three-dimensional emotion structure, made up of *evaluation, arousal-unpredictability* and *power,* exists. Although four emotion dimensions

were present in this study, arousal and unpredictability merged into one factor, hence the three-dimensional emotion structure being identified. What is of importance is the fact that these two emotion dimensions collapsed into one factor and this phenomenon can be studied on its own. The findings of such a study will give further insight of the meaning of emotion in white Afrikaans-speaking working adults. By applying the Meaning Grid instrument in this research, it conformed to international settings, where Fontaine et al. (2007) applied the Meaning Grid instrument to three different European languages (English, French and Dutch).

Research Article 4: Emotion episodes of white Afrikaans-speaking working adults in the workplace

The main aim of this article was to determine the meaning and content of emotion episodes of white Afrikaans-speaking working adults in the workplace. Based on the results of this article, the following conclusions could be made:

- Research aim 1: To give an overview of current two-dimensional emotion measurements based on a literature search

Self report measures assessing emotions in the workplace focus on two-dimensional models e.g. Watson and Tellegen's (1985) positive and negative affect schedule and Thayer's (1989) tense and energetic arousal. The Positive and Negative Affect Schedule (PANAS) measures positive and negative constructs as both states and traits. Therefore, used as a psychometric scale, the PANAS can show relations between positive and negative affect with personality states and traits (Watson, Clark, & Tellegen, 1988). The PANAS has been used for diverse purposes in clinical (e.g., Clark & Watson, 1991), social (e.g., Schmeichel, Vohs, & Baumeister, 2003) and personality (e.g., Hemenover, 2003) psychology research.

In 1989, Thayer's study of the dimensionality of people's experiences of activation led to four independent factors, namely two activation factors and two deactivation factors being obtained. Activation was reconceptualised as varying along two dimensions: *energetic arousal* (feelings ranging from sleepy to awake) and *tense arousal* (feelings ranging from calm to nervous) (Schimmack & Grob, 2000; Thayer, 1989; Watson, Wiese, Vaidya, &

Tellegen, 1999). This is supported firstly with the conclusion that the two activation dimensions are related to different causes. For example, energetic arousal is influenced by a circadian rhythm (Thayer, 1989; Watson et al., 1999) unlike tense arousal that is not. Secondly the two activation dimensions can change in opposite directions. Energetic arousal decreases in response to low blood sugar levels while tense arousal increases (Gold, MacLeod, Deary, & Frier, 1995). Thirdly the two types of activation have different consequences; for example, energetic arousal is a better predictor of cognitive tasks than tense arousal (Heller, Nitschke, & Lindsay, 1997).

- Research aim 2: To conseptualise emotion and emotion episodes at work

It is clear that throughout the literature some researchers have focused on larger life events (Hart, Wearing, & Headey, 1993), workplace bullying (Salin & Hoel, 2011; Vartia, 2001), sexual harassment (Koss, 1987; Rowe, 1996), daily hassles and uplifts (e.g. Kanner, Coyner, Schaefer, & Lazarus, 1981) and the narcissistic manager (Lubit, 2002; Maccoby, 2004) in the workplace. Some researchers have focused on the minor day-to-day occurrences that do have meaningful effects on the employee and the boss or management. The small events such as a printer malfunction, irrelevant comments from co-workers or unrelated job assignments, are events that all play a role in, and impact significantly on, emotion episodes in the workplace (Hart et al., 1993). Whether the emotions are regarded as large emotion or as minor emotion episodes, *both* are equally important in the workplace.

When focusing on the subject of emotions in the workplace, one will observe some of the specific emotions encountered in organisations, for example *fear*. As Flam states (1994, p. 66): “Fear means hiding away, occupying yourself with your professional work. The fear of separateness, fear of being identified, fear stemming from hesitation, from a lack of decision, fear of one’s own self, of self-defining oneself. Fear of being crossed, of being defined.” Another emotion such as *anger* may well occur in the workplace and the results are not beneficial to the workforce, may lead to reduced productivity, and can increase employee turnover and cause lower quality work (Hall, 2008). A further emotion such as *happiness* can also be experienced in the workplace, and Dutton and Edmunds (2007) explained the result when happiness occurs at work. Happiness at work is about mindfully making the best use of

the resources and one has to overcome the challenges one faces. Actively relishing the highs and managing the lows will help one maximise one's performance and achieve one's potential. This not only builds one's happiness but also that of others, who will be affected and energised by what one does. The nature of positive and negative emotions in the workplace is evident (Ashkanasy, Zerbe & Härtel, 2002; Lord, Klimoski, & Kanfer, 2002) when one pays attention to the emotional side of organisational life. Emotions such as happy, satisfaction, support and friendliness have beneficial effects on an organisation's growth (e.g., Cameron, Dutton, & Quinn, 2003; Snyder & Lopez, 2002). Feelings such as anger, despair, sorrow and grief can be seen as negative emotions and can be found in every organisation (Frost, 2003).

Weiss and Cronpanzano (1996) said different things happen to people in work settings and people often react emotionally to these events. Therefore, there is a great deal of correlation between the emotion experience and the specific emotion episode that occurs at work such as job satisfaction, organizational commitment and intention to quit (Fisher, 1998). Therefore, once understanding emotion at work, it is important to investigate the context of the different emotion episodes that may occur in the workplace.

In 1998, Basch and Fisher investigated the causes of workplace emotions of employees of an Australian hotel, and focused on the emotion events in the workplace. Basch and Fisher (1998) looked at specific events within an employee's day-to-day set of activities and sought to understand which of these events led to certain emotional reactions. With regard to experiencing negative emotions, workers were more likely to cite events related to dealing with people than events related to dealing with things (Basch & Fisher, 2000). In the late 50's work done by Herzberg, Mausner, and Snyderman (1959) asked respondents to tell them about a time that they felt especially good or bad about their job. The events were subsequently sorted into 16 categories. The motivation for his research work was to reach a better understanding of employees' attitudes and motivation Therefore, Izard (1991) stated that emotion researchers are quite clear that different types of events cause different emotions.

- Research aim 3: To give an overview of the Affective Events Theory as a reference to study emotion episodes in the workplace.

The importance of studying emotions in the workplace became clear when Weiss and Cropanzano (1996) presented a framework for studying emotions, moods and job satisfaction. The affective event theory (AET) became a method of investigating emotions and their influence on one's work (Weiss & Cropanzano, 1996). The importance of the Affective Events Theory is that emotional states are seen to lie at the core of attitude formation and employee behaviour in organisations. (Ashkanasy & Daus, 2002). According to this theory, everyday emotional events influence the way one thinks in reference to one's jobs, one's employers, and one's colleagues. The theory carries an important message to managers: emotions in organisational settings and the events that cause them are not to be ignored, even if they appear to be relatively minor *(*Ashkanasy & Daus, 2002). The theory suggests that managers should pay attention to the emotional climate within the organisation. The positive or negative events that determine how one feels, determine the way one thinks and feels at work (Ashkanasy & Daus, 2002).

The model increases understanding of links between employees and their emotional reaction to events in the workplace (Weiss & Cropanzano, 1996). For instance, jobs that are high in scope should more frequently produce events (instances of positive feedback, important goals successfully met, etc.) which lead to momentary positive emotions (joy, happiness, pride). Weiss and Cropanzano propose that affective experiences may lead to spontaneous affectivity-driven behaviour such as acts of good or bad citizenship (Weiss & Cropanzano, 1996).

- Research aim 4: To determine if emotion episodes consist of a two-dimensional or multiple-dimensional factorial model when measured in a work context in the white Afrikaans-speaking working adult group in South Africa.

At present, the existing self-report measuring instruments in the workplace focus on the measurement of a two-dimensional model involving valence and arousal (Watson & Tellegen, 1985). However, Fontaine et al. (2007) argues for an investigation of multiple-

dimensional models of emotion using the componential emotion theory. Different components in this theory include (a) appraisals of events, (b) psychophysiological changes, (c) motor expressions, (d) action tendencies, (e) subjective experiences and (f) emotion regulation. Fontaine et al. (2007) also said that, when emotions are investigated in the natural contexts in which they occur, it is also essential to study the emotion episodes in the workplace that cause them.

The results reported a three-factor solution that explained 30,61% of the total variance. The first dimension was labeled *evaluation-pleasantness dimension* (where pleasant emotions are opposed to unpleasant emotion terms) and explained 14,04% of the variance. The second dimension was labeled *activation-arousal dimension* (with fear terms are opposed to, for instance restfulness) and explained 9,76% of the variance. The third dimension was labeled *power-control dimension* (with anger as opposed to sadness) and explained 6,81% of the variance. Therefore, a three-dimensional emotion structure was found after determining the meaning and content of emotion episodes (as measured in the context of the componential emotion theory approach) in white Afrikaans-speaking working adults. The sample includes a) the evaluation-pleasantness dimension, b) the activation/arousal dimension and c) the power-control dimension.

The first dimension was inclusive of the *evaluation-pleasantness dimension* and evaluates an emotion's attributes of pleasantness versus unpleasantness. It is characterised by intrinsic appraisals of pleasantness and goal conduciveness and action tendencies of approach versus avoidance (Fontaine et al., 2007), that facilitate information processing and prepare the organism for adaptive behaviour (Scherer, 2009). Examples of emotion terms presented in this study are *"felt good"*, *"I smiled", "the situation was pleasant for me (independently of the possible consequences)", "felt restless", "wanted to hit"* and *"suffered loss"*. Research into the *evaluation-pleasantness dimension* can be utilised in numerous ways in work settings to achieve this. Research suggests that pleasant emotions can improve creativity (Isen, Daubman, & Nowicki, 1987) and efficiency (Grawitch, Munz, & Kramer, 2003), broaden individuals' scope of attention (Fredrickson & Branigan, 2005) and increase intuition (Bolte, Goschkey, & Kuhl, 2003). Pleasant emotions can enhance problem-solving (Isen et al., 1987), improve certain types of information recall (Isen & Baron, 1991), increase efficiency

in highly complex decision-making (Isen & Means, 1983) and lead to more cooperative approaches during conflict resolution (George, Brief, & Motowidlo, 1996).

The second dimension was inclusive of the *activation-arousal dimension* and according to Fontaine et al. (2007) is characterised by sympathetic arousal, e.g. rapid heartbeat and readiness for action. Examples of emotion terms presented in this dimension included *"I felt active (aroused)", "I wanted to disappear or hide from others"* and *"I felt strong"*. Our level of arousal directly affects how one behaves and influences the efficiency of one's behaviour with moderate levels leading to the most efficient behaviour, while levels in the lower and higher areas of arousal cause inefficient behaviour. However, under some conditions, for instance situations in which one is highly skilled or experienced at work, tolerance levels may be higher and arousal suppressed or deactivated, causing tiredness and loss of job satisfaction (O'Leary-Kelly et al., 1996).

The third dimension was inclusive of the *power-control dimension.* This dimension is characterised by appraisals of control, of how powerful or weak a person feels when a particular emotion is experienced and includes feelings of dominance or submission, the impulse to act or withdraw and changes in speech and parasymphatic symptoms (Fontaine et al., 2007). Examples of emotion terms on this dimension included expressions such as *"I experienced the emotion for a long time", "I spoke faster"* and *"I spoke louder"*.

Owen (2007) and Greene (2002) defined *power* as the ability (or the potential) of one person to influence the behaviour of another person. It is to get someone to do something one wants done, in other words to make things happen the way that one wants them. The abuse of power in the workplace is evident in organizational behaviour such as workplace bullying (Salin, & Hoel, 2011; Vartia, 2001), sexual harassment (Koss, 1987; Rowe, 1996), narcissistic managers (Lubit, 2002; Maccoby, 2004) and power abuse (Greene, 2002; Owen, 2007) which can turn a workplace upside down. At the organisational level, culture, organisational structure, and job design are all components that can enhance the climate for workplace bullying (Salin, 2004). For instance, bullying may be prevalent in organisations where confrontation is part of the working culture or is encouraged, and where perpetrators feel there are no recriminations for their actions (Sheehan, 2006).

In the workplace, the most common forms of sexual harassment are verbal forms such as 'sexual jokes' and 'remarks about body, clothes and sex life'. Furthermore, nonverbal forms such as ‘staring, whistling’ and physical forms such as 'unsolicited physical contact' are frequently reported (Bureau, 1991). Female victims of sexually harassing acts may experience increased psychological distress or stress-related illnesses (Crull, 1982) and may begin to fear relationships with men (schoolmates, boss or colleague) (Hughes & Sandler, 1988) and can lead to dropping out from college/university or absence from work. The power dimension plays a big part when a perpetrator is satisfied with the response (blamed themselves, pretending to be invisible or keep quiet) of his/her victim after sexual harassment took place at work (Varsa, 1993).

King (2002) stated that in the event of a crisis, effective leadership becomes central to the operation of the organisation. On any given day, one can either hear or read about organisations facing lawsuits, layoffs, bankruptcy or violence, and how an organisation and its leaders respond to a crisis, may affect not only the company’s bottom line, but also its overall image and reputation (Coombs, 1999; King, 2004). Therefore, narcissistic leaders, who have an overpowering sense of self-importance, coupled with the need to be the center of attention, will often ignore the viewpoints of others within the organisation. Such behaviours may not only harm the leader, but also potential followers, company employees, as well as the organisation (Conger & Kanungo, 1998).

- Research aim 5: To determine the different categories of emotion episodes in a work context in the white Afrikaans-speaking working adult language group in South Africa.

From the emotion episodes of white Afrikaans-speaking working adults in the workplace study one hundred and seventy nine respondents (*N*=179) reported 84 positive and 267 negative emotion episodes that took place at work. Seven (7) out of the 358 emotion episodes were unclassifiable. Each participant reported two (2) emotion episodes. Nine categories of positive emotion episodes emerged and nineteen categories of negative emotion episodes emerged In terms of the categories of positive and negative emotions, negative emotion episodes outnumbered positive emotion episodes by three to one.

Nine different categories of episodes for satisfying emotion experienced were mentioned. These consisted of behaviour of work colleagues, acts of boss/superior/management, goal achievement, receiving recognition, workplace policy, task recognition, personal incidents, emotion involvement and subordinate behaviour. The three highest categories of satisfying emotions episodes were *"Goal Achievement"* (*N*=31), *"Receiving Recognition"* (*N*=20) and *"Personal Incidents"* (*N*=10). Goal achievement describes situations when job related targets or goals were met, and receiving recognition refers to positive feedback from managers, supervisors and work colleagues of meeting targets. Nineteen different categories of episodes for less satisfying emotion episodes were mentioned. It consist of behaviour of work colleagues, acts of boss/superior/management, lack of goal achievement, lack of receiving recognition, workplace policy, task requirements, personal incidents, emotional involvement, subordinate behaviour, workload, work mistakes, customers' behaviour, external environment, lack of control, physical well-being, involved in disciplinary action, workplace strikes, wellness of colleagues and unfairness in the workplace. In the categories of less satisfying emotions episodes, the three highest were *"Behaviour of Work Colleagues"* (*N*=58), *"Acts of Boss/Superior/Management"* (*N*=47) *and "Task Requirement"* (*N*=33). The first two categories are appraised less satisfying behaviour towards oneself or others by work colleagues, managers, supervisors and customers. In terms of the categories of satisfying and less satisfying emotions episodes, less satisfying emotion episodes outnumbered satisfying emotions episodes by three to one.

The highest category of satisfying emotion episodes was *"Goal Achievement",* with 31 emotion episodes reported. Goal achievement describes situations when job related targets or goals successfully arrived at and acknowledged with pride. Therefore, when targets or goals are reached by people, very positive emotions will surround the work situation as well as any social event. The second highest was *"Receiving Recognition",* with 20 emotion episodes at work. This category refers to appraised behaviour towards employees or colleagues for goals achieved or helping behaviour. The third highest category reported was *"Personal Incidents",* with 10 emotion episodes. This reflects one's own satisfying experiences which were of a personal nature and not work related, although the emotion of the episodes was carried over to the work situation. *"Behaviour of work colleagues"* is behaviour towards oneself, employee, colleagues or management. *"Task recognition"* is appraised behaviour

towards employee, colleagues or management for a job well done. *"Acts of Boss/Superior/Management"* is recognition through acts or gestures from the boss/superior or management indicating approval and was reported four (4) times. *"Emotion Involvement",* was reported three (3) times and involve emotions of pride, satisfaction, ownership of the employee by management. *"Workplace Policy"* involving procedures instituted to provide positive outcomes for employees and *"Subordinate Behaviour"* are acts of defiance and subversive nature undermining the authority of management and thus enhancing the employees' ego were only mentioned once and were reported the least number of times.

Achievement goals refer to the purposes or reasons an individual pursues an achievement task, most often operationalised in terms of academic learning tasks, although they can be applied to other achievement contexts such as athletic or business settings (Pintrich & Schunk, 1996). According to Urdan (1997) achievement of goals represent an integrated and organised pattern of beliefs about not just the general purposes or reasons for achievement, but also the standards or criteria (the ''target'') that will be used to judge successful performance. Collins English Dictionary defines *goal achievement* as something that has been accomplished after much effort and often in spite of obstacles and discouragements. When focusing on receiving recognition, Half (1994) mentioned that an amount of recognition is relative to job satisfaction. Bialopotocki (2007) defined recognition as an event that occurs when teachers perceive they are being praised for a job well done. According to Blasé and Kirby (1992) receiving recognition leads to increased motivation, increased loyalty, and increased production to achieve expectations of one's boss and increased use of positive discipline strategies. *Personal incidents* reflect an individual's reaction towards work or colleagues on satisfying emotional episodes that occur in his/her life. Maslow stated clearly that employment allows people to become self-actualised (Maslow & Lowery, 1998). Satisfying emotion episodes at work have a direct satisfying influence on an individual's behaviour and attitude at work and affect work performance. In turn, this may lead to recognition, reward and ultimately a stable environment within the workplace resulting in uplifting of satisfaction and/or quality of life (Haag, 2005).

Studies done in 2006 that focused on white professional workers have supported that work-family experiences affect physical health. Greenhaus, Allen, and Spector, (2006) stated that

apart from conflict and positive spillover, physical health and emotional reactions to combining work and family roles are also crucial outcomes of interest. Higher positive spillover between work and family has been associated with better self-appraised health (Grzywacz, 2000). Barnett and Hyde (2001) explained that work and the workplace (i.e., job role quality) can potentially enhance family well-being and positive aspects of family life (i.e. family role quality) can spill over into the workplace. Barnett and Baruch (1985) stated from their research work, for a long time, researchers have documented the positive effects employment status has on psychological well-being and from life satisfaction to decreased incidence of depression (Wethington & Kessler, 1989).

Herzberg (1966) concluded in his theory by saying that responses about good feelings are generally related to job content (motivators), whereas responses about bad feelings are associated with job context (hygiene factor). Motivators involve factors built into the job itself, such as achievement, recognition, responsibility and advancement and hygiene factors are extrinsic to the job, such as interpersonal relationships, salary, supervision and company policy (Herzberg, 1966).

The final conclusion that can be made is that satisfying emotion episodes experienced in the workplace can be strongly associated with salary, occupational stress, empowerment, company and administrative policy, achievement, personal growth, relationship with others, and the overall working condition. It has been argued that an increase in job satisfaction increases worker productivity (Wright & Cropanzano, 1997; Shikdar & Das, 2003).

In the categories of less satisfying emotion episodes, 58 emotion episodes were reported as *"Behaviour of Work Colleagues"* and refer to behaviour towards the employee or colleague of less satisfying manner. Most of these emotion episodes were relationship orientated. The participants reported 47 episodes of *"Acts of Boss/Superior/Management"* which involved acts showing disregard for employee emotions and feelings, and *"Task Requirement"* where the employee is required to perform undesirable tasks, were reported 33 times. These categories are appraised less satisfying behaviour towards oneself or others by work colleagues, managers, supervisors and customers. *"Personal Incidents"* weres mentioned 26 times and these are less satisfying personal experiences that were of a personal nature and not

work related, although the emotion of the episodes was carried over to the work situation. *"Subordinate Behaviour"* are acts of defiance and subversive nature undermining the employee and thus enhancing managements power and were reported 17 times. *"Emotional Involvement"* was classified as a category in which the employee became emotionally involved. *"Work Mistakes"* are feelings of apprehension, guilt and anxiety as a result of making a mistake, and were reported 13 times. *"Customer Behaviour"* is about disrespectful and intimidating customer behaviour.

"Workplace Policy" involves disagreement with management rules and policy that impact negatively on the employee *"Workload"* involve overload of work for unrelated pay or too much work for the staff compliment, *"Lack of Control"* involve no set structure in place, so limitations and boundaries undefined and *"Involved in disciplinary action"* involve resentment towards management for action taken against employee. All four categories were reported eight (8) times in the present study. *"Workplace strikes"* are disruptive staff action, reported four (4) times. Three episodes of *"Lack of Goal Achievements"* were reported and involved non achievement of set goals resulting in employer action. Two emotion episodes were experienced that involve external circumstances impacting on the job and categories as *"External Environment"*. *"Physical well-being"* emotion episodes were also reported twice (2) and refer to injuries caused by lack of adequate equipment or protection. The next three categories were reported only once by the participants, *"Lack of Receiving Recognition"* that involve apathy of management towards goals achieved, *"Wellness of colleagues"* that involve fear of co-workers safety and emotionally well-being and *"Unfairness in the workplace"* that involves inconsistent application of rules and regulations.

Haag (2005) mentioned that emotional episodes related to people would be less satisfying to people in general than events related to things at work. *Behaviour of work colleagues* was reported most in this sample group. Less satisfying emotion episodes occur more often when people feel particularly bad about their jobs; problems with colleagues or boss and frequent daily hassles will for example lead to a "not so good" quality of life or lack of well-being. The Random House Unabridged Dictionary defines behaviour as the process of doing or performing something. Work colleagues are defined as the people one works with, a partner in one's office, an associate one works with, or a person who is a member of one's class or

profession (Flexner, 1993). Shweder (1991) writes "Emotions have meanings, and those meanings play a part in how we feel". When looking at Shweder's statement about emotions, it is clear that behaviour towards one's colleagues at work plays a very important role in daily life.

Acts of colleagues and acts of management could account for 59% of instances in which employees experienced less satisfying emotion episodes and are likely to contribute to the experience of less satisfying workplace emotions (Basch & Fisher, 2000). The emotion episodes *acts of boss/superior/management* was reported the second most. If less satisfying behaviour from one's boss and colleague occurs at work, the employee's well-being will suffer and in turn this will affect work performance. A boss is defined as an employer or a supervisor who makes decisions or exercises authority, gives orders to employees or takes control at work (Flexner, 1993). Management can be characterised as the process of leading ("to lead by the hand") and directing all or part of an organisation. As a result, the bosses, superiors or management set the tone of the workplace by the way they act towards their employees.

Laplante (2009) stated that task requirement is determined by the boss or customer. Therefore, by analysing the task requirements, it determines whether the stated requirements are clear or unclear and complete or incomplete. Task requirements might be documented in various forms, such as natural-language documents, use cases, user stories, or process specifications. Task requirement also relates to job demands in the workplace. Hackman defined a task as " …assigned to a person (or group) by an external agent or is self-generated, and consists of a stimulus complex and a set of instructions which specify what is to be done vis-à-vis the stimuli". Jones and Bright (2001) stated that job demands represent the psychological stressors in the workplace. These include factors such as interruption, time pressures, conflicting demands, reaction time required, pace of work, proportion of work performed under pressure, amount of work, degree of concentration required, and the slowing down of work caused by the need to wait for others.

Glomb's (2002) findings suggest that a leading cause of a less satisfying emotion episode in the workplace is interactions with other people. Hart et al. (1993) on the other hand stated

that less satisfying emotion episodes are caused by things at work. Greene (2002) and Owen (2007) argue that power can be intoxicating and therefore power has the ability or the potential to influence the behaviour of another person and can lead to less satisfying emotion episodes in the workplace. Huselid (1995) believes that if workers are not motivated, turnover will increase and employees will become frustrated and unproductive. Lazarus (1966) reaches the conclusion that individuals will only feel the same emotion (e.g. satisfying or less satisfying emotions) if their appraisal of an event is the same. Therefore, it is clear that different types of events cause different emotions and may lead to satisfaction or quality of life.

- **Final conclusion of this article:**

This study investigated that in contrast to the currently dominant two-dimensional models, a multiple-dimensional model describes emotion experiences in the workplace when measured against emotion features. Based on the results of this study a three-dimensional model of emotion was successfully presented namely a) *evaluation-pleasantness dimension,* b) *activation-arousal dimension* and c) *power-control dimension,* proving to be more relevant than the two dimensions (valence and arousal) to which research normally refers to. Therefore, the most important conclusion is that the recognised dimensional structure of emotion experience is *not* two-dimensional, as claimed by the widely known two-dimensional models, *but* in fact it is three dimensional. Research attempts to determine the meaning of emotion in the natural contexts in which they occur, therefore it is important to investigate the different categories of emotion episodes in the workplace.

As stated 28 different categories of emotion episodes were reported by 179 participants and each person reported two (2) emotion episodes. Nine (9) of these categories were *satisfying emotion experiences* with a total of 84 emotion episodes reported and *less satisfying emotion episodes* were reported 267 times within 19 different categories of emotion episodes.

The result clearly indicates that *Goal Achievement, Receiving Recognition* and *Personal Incidents* were the most reported within the satisfying emotion episodes category. The end result of the first two categories is job satisfaction. Job satisfaction has a major effect on

people's lives and can be beneficial in various ways such as one's physical health, mental health and social life, and roll over to connecting to life satisfaction. Indirectly it benefits the organisation because satisfied workers will be much more productive, affect absenteeism to the better, perform better at work and be retained within the organisation for a longer period. *Personal Incidents* play a major role in any organisation because the workplace can potentially enhance family well-being and positive aspects of family life that can spill over into the workplace. Therefore, higher positive spillover, as reported in this study, between work and family has been associated with better self-appraised health and affects employees' psychological well-being at home and in the workplace. Goal achievement, receiving recognition and personal incidents are part of those aspects of the job that make people want to perform, and provide people with satisfaction. Therefore, it is important in order to understand people's behaviour at work. Managers or supervisors must be aware of the concept of needs or motives, because this may lead to more satisfying emotion episodes in the workplace.

In the categories of less satisfying emotion episodes, *"Behaviour of Work Colleagues", "Acts of Boss/Superior/Management"* and *"Task Requirement"* were reported most. All three reported categories may be the result of abuse of power in the workplace such as workplace bullying, sexual harassment and narcissistic managers. Firstly, workplace bullying commonly happens in organisations where dominant subordinate hierarchical relationships exist, therefore it can have a destructive effect on the physical and mental health of the victim. Secondly, the power dimension plays a big part in sexual harassment when the perpetrator is satisfied with the response (blamed themselves, pretending to be invisible or keep quiet) of his/her victim after sexual harassment took place at work. It may occur in verbal forms such as 'sexual jokes' and 'remarks about body and clothes" in the workplace. Thirdly, effective leadership is essential to the operation of the organization and therefore there is no place for narcissistic leaders who have an overpowering sense of self-importance, coupled with the need to be the center of attention, and will often ignore the viewpoints of others within the organisation. Such behaviours harm the potential follower employees, as well as the organisation.

Herzberg's (1966) theory expands the fact the motivating factors are those aspects of the job

that make people want to perform, and provide people with satisfaction, for example achievement in work and recognition. Therefore, it is important that in order to understand people's behaviour at work, managers or supervisors must be aware of the concept of needs or motives, which will help "move" their employees to act (Schulze & Steyn, 2003) because this may lead to more satisfying emotion episodes in the workplace. The overall conclusion can be made about the satisfying and less satisfying emotion episode categories that satisfying emotion factors are built into the job itself, such as achievement, recognition, responsibility, and less satisfying emotion factors and hygiene factors are extrinsic to the job, such as interpersonal relationships, salary, supervision and company policy (Herzberg, 1966).

6.2 LIMITATIONS

Research Article 1: The identification of emotion terms used by white Afrikaans-speaking working adults

The first limitation of this article was the fact that many of the participants had never completed a questionnaire of this nature and particularly about emotion terms. The second limitation was that the participants mentioned they had also never been requested to report on any emotions or emotion related topics. Data pertaining to the participants' emotional self-awareness were not available. The third limitation was that the study was limited to one group and that the different demographical groups gender, age and level of education were not investigated. The fourth limitation was that more females than males were willing to complete the questionnaires and subsequent studies should therefore aim to include a more equally proportioned representation of the sexes.

Research Article 2: The cognitive structure of emotion terms of white Afrikaans-speaking working adults

The first limitation of this article was the fact that the nature of the similarity rating questionnaire was very time consuming and participants complained that the questionnaire was too long. The second limitation was that many of the participants reported that this was the first time they had completed such a questionnaire in general, and in particular a

questionnaire based on emotions terms were they had to indicate to what extent each of the pairs of emotion terms had the same meaning in their own language. The participants mentioned that they had to think carefully about the pairs of emotions before they could answer the question. The third limitation was that more females than males were willing to complete the questionnaires and subsequent studies should therefore aim to include more male participants. The fourth limitation was that the males that were willing to complete the questionnaire, mentioned they were tired afterwards because the questionnaire demands time, energy and lots of thinking.

Research Article 3: The meaning of emotion according to the Emotion Componential Theory among white Afrikaans-speaking working adults in South Africa. Approach: A Meaning Grid Approach

The first limitation of this article was the fact that the some participants had difficulty comprehending the instructions, particularly in as far as the format of the questionnaire was concerned. This was evident from the questions participants asked during the questionnaire-completion phase, as well as in post-completion interviews. The second limitation was that some participants indicated that the questionnaire instructions were time-consuming and complained that the questionnaire itself was too long. They became tired and distracted, bringing into question the reliability and consistency or relevance of their responses in the early part of the questionnaire with their responses towards the end.

Research Article 4: Emotion Episodes of white Afrikaans-speaking working adults in the workplace

The first limitation of this article was the fact that the participants experienced difficulties with providing two (2) emotional episodes that took place in the workplace. The second limitation was the nature of the questionnaire which was very time consuming and some of the participants indicated that they were not fully familiar with the vocabulary emotion terms used in the questionnaire regarding the emotion episodes. The third limitation was that many of the participants reported that this was the first time they had completed such a questionnaire in general, and in particular a questionnaire based on emotions.

6.3. RECOMMENDATIONS

Research Article 1: The identification of emotion terms used by white Afrikaans-speaking working adults

6.3.1.1 Recommendations to the world of Industrial Psychology:

This article laid the foundation for valuable studies into a wide range of possibilities for future research. Similar research should be conducted for other culture groups in South Africa especially the coloured Afrikaans speaking language group. The combination of these studies will reveal the emotion lexicon of the different culture groups in South Africa and will also indicate the similarities and differences across cultures. The 263 free listing emotion terms with the highest average rating were selected. These emotion terms can now be used as a frame of reference of the emotion lexicon in Afrikaans. There are similarities and differences in the use of emotion lexicon.

6.3.1.2 Recommendations for future research:

The results of this study in the Afrikaans-speaking language group were clearly identified and it is important that the other 10 language groups in South Africa be studied to bring about a significant understanding of the way the people of all culture within South Africa express their emotions when for example experiencing trauma in the workplace.

It is recommended that all nine (9) provinces in South Africa be included in further studies as only the Eastern Cape, Free State and Northern Cape provinces were included in the free listing study, and seven (7) provinces were included in the prototypicality ratings, namely: Eastern Cape, Gauteng, Free State, Mpumalanga, North-West, Western Cape and KZN. Further studies should also include equal number of male and female participants. The instructions for completion of the free listing questionnaire should include examples of emotion terms, since some participants may at first not be clear of what is expected.

During this study, emotion terms commonly used in white Afrikaans-speaking working adults were identified and these emotion terms unlock a new aspect that can be analyzed. Future

research can determine what causes the predominant emotion terms *nice, fed up* and *loveable*, and in what circumstances are they more prominent in the white Afrikaans culture group.

Research Article 2: The cognitive structure of emotion terms of white Afrikaans-speaking working adults

6.3.2.1 Recommendations to the world of Industrial Psychology:

It is clear that although different amounts of emotion terms were used in the similarity rating methods of the above studies, the 80 emotion terms used in this study definitely represented a three emotion dimension structure, making the method followed in the presented study a highly reliable method.

The results confirmed the theory of Osgood and his colleagues (1957) that a three emotion dimensional structure could be universally represented across cultures. The three emotion dimensional structure was replicated in a white Afrikaans speaking working adult group (namely: *evaluation-pleasantness, power-control and activation-arousal dimension).* Thus, although literature indicates that a two-dimensional structure can almost always be found (cross reference) the results of the current study were in accordance with that of Osgood et al. (1957).

The method of similarity sorting using 80 emotion terms, proved to be highly reliably across the eight versions of the measurement used in this study. The results of this study can now be used as a frame of reference on which other emotion research can be built upon.

6.3.2.2 Recommendations for future research:

The findings of this study should be compared with research on other culture groups, as it will assist the understanding of the similarities and differences between the culture groups, and how emotions are experienced within the different groups. Therefore, it would be interesting to determine if similarities and differences exist between all 11 official language groups in South Africa. Research should also be conducted in the provinces of South Africa that were not included in this research.

Russell (1989), Daly et al. (1983) as well as Havlena and Hollbrook (1983) mention that much of the evidence supports a three-dimensional approach for accurately assessing emotional response and that models with fewer than three dimensions may not accurately assess emotional response. Therefore, models with less than three-dimensions may not be enough for the purpose of studying similarity sorting when investigation the cognitive structure in Afrikaans-speaking working adult language group in South Africa. To add value to the world of Industrial Psychology, the three-dimension structure (*evaluation-pleasantness, power-control* and *activation-arousal dimension)* that was found in present study, is very important and significant when studying the meaning of emotion.

Research Article 3: The meaning of emotion according to the Emotion Componential Theory among white Afrikaans-speaking working adults in South Africa. Approach: A Meaning Grid Approach

6.3.3.1 Recommendations to the world of Industrial Psychology:

A three-dimension emotion structure is required to study the emotions of Afrikaans speaking people as the two-dimension structure is not comprehensive enough for this purpose. According to the componential emotion theory approach, the 144 emotion features are very important building blocks when studying the meaning of emotion. Consequently, one wants to know if the meaning structure of emotions is evident in the context of the work environment. To add value to the world of Industrial Psychology, the meaning of emotions in emotion episodes in the workplace needs to be measured.

6.3.3.2 Recommendations for future research:

The population of South Africa consists of a conglomerate of people from all cultures and races. The economic and cultural dynamics in each province of South Africa vary as do the nature and environment of individual workplaces; nevertheless each workplace, environment and location does have an impact on emotions experienced. It would be interesting to determine if similarities and differences exist between Afrikaans-speaking people in the different provinces and the findings of this study should be compared with research on other culture groups, as it will assist the understanding of the meaning of emotions within culture groups.

Research Article 4: Emotion Episodes of white Afrikaans-speaking working adults in the workplace

6.3.4.1 Recommendations to the world of Industrial Psychology:

The work of Osgood and his colleagues from the 1950s to the 1970s (e.g., Osgood et al., 1975) has confirmed that the three-dimensions of evaluation, power and activation is the three-dimensional model representative of emotional space. Fontaine et al. (2002) and Shaver et al. (1987) confirm this with similarity judgments of prototypical emotion terms. Since then till now, many researchers have adopted a two-dimensional model (Pleasantness (valance) and arousal (activation), or a rotation thereof (such as positive and negative affectivity, or tense arousal and energetic arousal) in work done by Yik and his colleagues in 1999. For that reason, Fontaine et al. (2007) argues for an investigation of a multi-componential emotion model. The result of the present study confirms those of the earlier findings of a three dimension emotion structure of Osgood and colleagues. By using the Fontaine et al. (2007) approach (feature profile of all six components) a successful investigation determined the meaning and content of emotion episodes in white Afrikaans-speaking working adults in South Africa. For this reason, to investigate the meaning of emotions in the workplace in other language groups in South Africa, would add value to the world of emotions and to the bigger picture of Industrial Psychology.

6.3.4.2 Recommendations for future research:

It is recommended that similar studies be conducted for males and females separately, to determine similarities and differences. The meaning of emotions in other cultures in South Africa should also be researched and future research should be expanded to include all provinces in South Africa. Suggestions for practical use of these findings could be made for their application in the workplace in situations involving training of personnel to equip them to handle emotions surrounding incidents. It can also be utilised to obtain the desired compromise when negotiating with people of cross-culture and differing emotions, as well as how to understand how emotions in cross-cultures can cause conflict. This will assist with desirable outcomes in conflict handling and how the understanding of cross-culture emotions is beneficial in the selection of successful and happy employees.

7. Final conclusion and value of this thesis

The general goal of this study was to a) to investigate the emotion lexicon in the white Afrikaans-speaking language group, b) to determine the cognitive emotion structure of this cultural group, c) to investigate the meaning of emotion as comprehensively as possible (multidimensional models of the meaning of emotion), and d) to determine the meaning and content of emotion episodes in the workplace.

Emotion research is an important research topic, thus making the measurement of emotion in the workplace crucial (Ashkanasy, Härtel, & Zerbe, 2000; Basch & Fisher, 1998; Brief & Weiss, 2002; Fontaine et al., 2007).). In attempting to study, understand and measure the role of emotions in the human condition, various researchers (Fisher, 1998; Russell, 1980; Watson & Tellegen, 1985) have identified different theoretical models to manage the information they have gathered and the observations they have made. In order to study or scientifically investigate any human behaviour, it is essential that such behaviour can be measured, if not quantitatively, then at least qualitatively. Therefore, the free listing of emotion terms was compiled, and the emotion terms were prototypically rated by Afrikaans-speaking people in South Africa. From the information obtained in this research it was revealed that the emotion terms *nice (lekker), fed up/had enough (gatvol/"genoeg gehad")* and *loveable (liefdevol)* are at this stage unique to the white Afrikaans language group. These terms had not been reported in any previously conducted prototypical studies. All three of these words are frequently and readily used in the everyday lives of the Afrikaans-speaking language group. Therefore by identifying the emotion terms of the Afrikaans language culture it enabled the structure of the psychological conditions to which such emotion terms apply to this specific group to be discovered.

Both of these were then used as measuring instruments to determine the cognitive emotion structure. However, what one finds with regard to emotion research and measurement are two-dimensional models. The existing affect has been described with a choice of two dimensions and structures, i.e. Russell's (1980) circumplex, Watson and Tellegen's (1985) positive and negative affect, Thayer's (1986) tense and energetic arousal, and Larsen and Diener's (1992) eight combinations of pleasantness and activation. These two dimensions and

structures measure a person's experiences. If it is really the case and there are three and not *only* two emotion dimension structures, as stated in the literature, researchers are missing out on a bigger picture for not drawing on the experience of emotion sufficiently. Russell (1989), Daly et al. (1983) as well as Havlena and Hollbrook (1983) support this argument by mentioning that much of the recent evidence supports a three-dimensional approach for accurately assessing emotional response and that models with less than three dimensions may not accurately assess emotional response.

From the results of the Multidimensional Scaling (similarity rating) a three-dimensional cognitive emotion structure (*evaluation-pleasantness, power-control* and *activation-arousal dimension)* was identified and interpreted as representative of the white Afrikaans speaking working adult group. By identifying the emotion terms of the Afrikaans language culture, the structure of the psychological conditions, to which such emotion terms apply, give a frame of reference of the emotion lexicon in Afrikaans. In recent studies the sufficiency of two-dimension models to comprehensively investigate emotions was questioned. The *cognitive* emotion structure in the Afrikaans-speaking adult group revealed a three-dimensional structure and therefore it was found that there are three and not *only* two emotion dimension structures. The start of multiple emotion dimension models was reported by Osgood and colleagues already in 1975, when they identified a three-dimensional structure in the emotion domain that is suggestive of the Evaluation-Potency-Activation (EPA) dimensions in the connotative or affective meaning of words (Osgood et al., 1975). The three-dimensional emotion model of Osgood was replicated in cross-cultural similarity sorting studies by Fontaine et al. in 2002. The similarity sorting studies also indicate the importance of studying emotions in specific cultural contexts. Studying emotion in different cultures is especially relevant in a country such as South Africa that has a diverse variety of cultures and eleven official languages.

Fontaine and colleagues (2007) followed an approach that studied the meaning of emotion in different cultural groups in the context of 144 emotion features using a componential emotion theory approach. Therefore, Fontaine et al. (2007) argue in this groundbreaking research that was published in *Psychological Science* that emotion meaning has more than only two dimensions. For this reason, this study followed the same approach that investigated the

meaning structure of emotion in the sample group in the emotion features (all that emotions are made up off) using a componential emotion theory approach. According to Fontaine et al. (2007) this is an empirical and theoretical method to study the meaning of emotions across cultures. The results confirm that within the white Afrikaans speaking working adult group, a three-dimensional emotion structure, made up of *evaluation, arousal-unpredictability* and *power,* exists. Although four emotion dimensions were present in this study, arousal and unpredictability merged into one dimension, hence the three-dimensional emotion structure being identified. What is of importance is the fact that these two emotion dimensions collapsed into one factor and this phenomenon can be studied on its own. The findings of such a study will give further insight into the meaning of emotion in white Afrikaans-speaking working adults. By applying the Meaning Grid instrument in this research, it conformed to international settings, where Fontaine et al. (2007) applied the Meaning Grid instrument to three different European languages (English, French and Dutch).

Self-report measures assessing emotions in the workplace focus on two-dimensional models, e.g. Watson and Tellegen's (1985) positive and negative affect schedule and Thayer's (1989) tense and energetic arousal. However, Fontaine et al. (2007) argues for an investigation of a multi-componential emotion model. This study investigated that in contrast to the currently dominant two-dimensional models, a multiple-dimensional model describes emotion experiences in the workplace when measured against emotion features. Based on the results of this study a three-dimensional model of emotion, was successfully presented, namely a) *evaluation-pleasantness dimension,* b) *activation/arousal* and c) *power-control dimension,* proving to be more relevant than the two dimensions (valence and arousal) to which research normally refers. This finding has significant consequences for the studying of positive and negative affect, such as workplace aggression (O'Leary-Kelly, Griffin, and Glew, 1996). Therefore, the most important conclusion is that the recognised dimensional structure of emotion experience is *not* two-dimensional, as claimed by the widely known two-dimensional models, but in fact it is three dimensional.

Weiss and Cropanzano (1996, p. 11) said "*Things happen to people in work settings and people often react emotionally to these events. These affective experiences have direct influences on behaviours and attitudes"*. Therefore, because relevant natural context for the

field of Industrial Psychology are the work context, it was also important to investigate the catories of emotion eposides in the work environment. One hundred and seventy nine respondents reported 84 satisfying emotion episodes and 267 less satisfying emotion episodes that took place at work. Seven (7) out of the 358 emotion episodes were unclassifiable. Nine different categories of episodes for satisfying emotion experienced were mentioned. It consist of behaviour of work colleagues, acts of boss/superior/management, goal achievement, receiving recognition, workplace policy, task recognition, personal incidents, emotion involvement and subordinate behaviour. The three highest categories of satisfying emotions episodes were *"Goal Achievement"* (*N*=31), *"Receiving Recognition"* (*N*=20) and *"Personal Incidents"* (*N*=10). Goal achievement describes situations when job related targets, or goals were met and receiving recognition refers to positive feedback from managers, supervisors and work colleagues of meeting targets. Nineteen different categories of episodes for less satisfying emotion episodes were mentioned. These consist of behaviour of work colleagues, acts of boss/superior/management, lack of goal achievement, lack of receiving recognition, workplace policy, task requirement, personal incidents, emotional involvement, subordinate behaviour, workload, work mistakes, customers' behaviour, external environment, lack of control, physical well-being, involvement in disciplinary action, workplace strikes, wellness of colleagues and unfairness in the workplace. In the categories of less satisfying emotions episodes, the three highest were *"Behaviour of Work Colleagues"* (*N*=58), *"Acts of Boss/Superior/Management"* (*N*=47) *and "Task Requirement"* (*N*=33). The first two categories are appraised less satisfying behaviour towards oneself or others by work colleagues, managers, supervisors and customers. In terms of the categories of satisfying and less satisfying emotions episodes, less satisfying emotion episodes outnumbered satisfying emotions episodes by three to one. In conclusion the satisfying and less satisfying emotion episode categories with satisfying emotion factors built into the job itself, such as achievement, recognition, responsibility and with less satisfying emotion factors hygiene factors are extrinsic to the job, such as interpersonal relationships, salary, supervision and company policy (Herzberg, 1966).

Lazarus (1966) makes the statement that individuals will only feel the same emotion (e.g. satisfying or less satisfying emotions) if their appraisal of an event is the same. Therefore, Fontaine et al. (2007) argued for an investigation of a multi-componential emotion model, the

theory was tested in the workplace and it was found that two dimensions are not enough and it would have far reaching implications on the way emotion episodes must be studied in the Field of Industrial Psychology. For that reason, the environment and experience of emotions are much more complex.

This study contributed to indicate that the white Afrikaans speaking language group uses culture relevant emotion terms. These cultural relevant emotions terms were presented as a unique cognitive (lexical) emotion structure by making use of a similarity rating task. These more linguistic processes of determining emotion terms and structure moved towards a process of determining emotion as an emotion structure in the context of emotion features (all the component that emotions are made up off). This was done by applying a componential emotion theory approach. The study went on to a more applied process. The thesis ended by determining an emotion structure not only within the context of emotion features, but by determining the meaning of emotion in the context in which it occurs – the workplace. Emotion episodes reported by white Afrikaans speaking employees provided insight into the emotion experiences at work of employees in this cultural group. The results obtained in this thesis provide information to be considered in the measurement, decision-making, suggested human resource interventions researching emotion aspects. It highlighted the investigation of emotions in cultural groups.

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Appendix A

Research Report

The World of Emotions Is Not Two-Dimensional

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ABSTRACT—*For more than half a century, emotion researchers have attempted to establish the dimensional space that most economically accounts for similarities and differences in emotional experience. Today, many researchers focus exclusively on two-dimensional models involving valence and arousal. Adopting a theoretically based approach, we show for three languages that four dimensions are needed to satisfactorily represent similarities and differences in the meaning of emotion words. In order of importance, these dimensions are evaluation-pleasantness, potency-control, activation-arousal, and unpredictability. They were identified on the basis of the applicability of 144 features representing the six components of emotions: (a) appraisals of events, (b) psychophysiological changes, (c) motor expressions, (d) action tendencies, (e) subjective experiences, and (f) emotion regulation.*

Reduction of complex data sets involving a large number of measures to a few meaningful underlying dimensions is common in many branches of science. For example, the perception of color is described by the dimensions of brightness, hue, and saturation. For more than half a century, emotion researchers have attempted to establish the underlying dimensional space that most economically accounts for the similarities and differences in emotional experience, and there has been considerable disagreement about the number and nature of the dimensions that provide an optimal framework for studying emotions. Most early research suggested at least three dimensions, commonly evaluation-pleasantness, potency-control, and activation-arousal (e.g., Osgood, May, & Miron, 1975). Although many recent researchers have focused exclusively on two-dimensional models, such as the valence-arousal model (e.g., Yik, Russell, & Feldman-Barrett, 1999), the search for the optimal low-dimensional representation of the emotion domain remains open.

Past work has primarily derived dimensions of emotion from the perceived similarity of emotion labels or facial expressions (e.g., Fontaine, Poortinga, Setiadi, & Suprapti, 2002; Schlosberg, 1952; Shaver, Schwartz, Kirson, & O'Conner, 1987), or from individual differences in verbal descriptions of emotional experiences (e.g., Yik et al., 1999), and the dimensions have often been derived in an atheoretical manner. In contrast, the work reported here started from the widely shared theoretical conceptualization of emotions as consisting of variably interrelated changes in activity across a set of six components: (a) appraisals of events, (b) psychophysiological changes (bodily sensations), (c) motor expressions (face, voice, gestures), (d) action tendencies, (e) subjective experiences (feelings), and (f) emotion regulation (Ellsworth & Scherer, 2003; Niedenthal, Krauth-Gruber, & Ric, 2006; Scherer, 2005). No previous studies have included all six of these components, and most have included only one or two. To obtain definitive evidence concerning the optimal low-dimensional space, we used a semantic-profile approach (Scherer, 2005), asking participants from three different Indo-European language groups (English, French, and Dutch) to evaluate 24 prototypical emotion terms on scales representing 144 features that represent activity in all six of the major components of emotion (Ellsworth & Scherer, 2003).

METHOD

Instrument

For this study, we used a new instrument originally constructed in English, the GRID instrument (Scherer, 2005). The GRID consists of a Web-based questionnaire composed of 24 emotion terms and 144 emotion features. The 24 terms are prototypical emotion terms commonly used in both emotion research and

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daily language. This representative set was chosen on the basis of frequent use in the emotion literature, consistent appearance in cross-cultural free-listing and prototypicality-rating tasks, and frequent mention in the self-reports from a large-scale Swiss household study of people's descriptions of an emotional situation they experienced the previous day (Scherer, Wranik, Sangsue, Tran, & Scherer, 2004). The 144 emotion features operationalize activity in each of the six emotion components (see Table 1). Thirty-one features refer to appraisals, 18 to bodily experiences, 9 to facial expression, 12 to vocal expression, 5 to gestural expression, 40 to action tendencies, 22 to subjective feelings, and 4 to regulation. An additional 3 features represent other qualities, such as frequency and social acceptance. The features were derived from a broad range of very diverse emotion theories and literature, such as the appraisal theory of Scherer (2001), the psychophysiological emotion literature (Stemmler, 2003), the action-tendency theory of Frijda (Frijda, Kuipers, & Terschure, 1989), the current-affect theory of Russell (Yik et al., 1999), and the expression-regulation theory of Ekman and Friesen (1969). The English GRID instrument was translated into French and Dutch by means of the translation/back-translation procedure.

Procedure

The GRID was administered in a controlled Web study (Reips, 2002) in which each participant was given 4 emotions randomly chosen from the set of 24 and asked to rate each in terms of the 144 emotion features. Using a 9-point scale ranging from *extremely unlikely* (1) to *extremely likely* (9), they rated the likelihood that each of the 144 emotion features can be inferred when a person from their cultural group uses the emotion term to describe an emotional experience. Each of the 144 emotion features was presented on a separate screen, and participants rated all 4 emotion terms for that feature before proceeding to the next feature.

Participants

In total, 198 Dutch-speaking students in Belgium (102 males, 96 females; average age = 20.88 years), 188 English-speaking students in the United Kingdom (74 males, 114 females; average age = 21.23 years), and 145 French-speaking students in Switzerland (37 males, 108 females; average age = 23.26) completed the GRID instrument in their own language.

RESULTS

To reduce the dimensionality of the emotion domain, we used principal component analysis (PCA), which finds the dimensions of greatest variance in the data set and represents each observation by its coordinates along each of these dimensions. PCAs were computed within and across the three languages, treating the 24 emotion terms as observations and the average scores on the 144 emotion features as variables.[1] A four-dimensional solution was selected on the basis of both the scree plots and the replicability of the configurations across the three languages (van de Vijver & Leung, 1997).[2] This solution accounted for 75.4% of the total variance. After varimax rotation, the first dimension (evaluation-pleasantness) accounted for 35.3% of the variance, the second dimension (potency-control) for 22.8%, the third dimension (activation-arousal) for 11.4%, and the last dimension (unpredictability) for 6.0%. This overall structure was replicated within each of the three language-culture samples.

The interpretation of the four dimensions is based on their relationships with the 144 emotion features and on the coordinates of the 24 emotion terms. Table 1 lists all 144 emotion features and their relationships to the four emotion dimensions (component loadings). Figure 1 represents the coordinates of the 24 emotion terms on these dimensions.[3] The first dimension can be interpreted as an evaluation-pleasantness dimension. Appraisals of intrinsic pleasantness and goal conduciveness, as well as action tendencies of approach versus avoidance or moving against, characterize this dimension. Pleasant emotions are opposed to unpleasant emotions on this dimension (see Fig. 1a). The second dimension is characterized by appraisals of control, leading to feelings of power or weakness; interpersonal dominance or submission, including impulses to act or refrain from action; changes in the rate and volume of speech; and parasympathetic symptoms. On this dimension, emotions such as pride, anger, and contempt are opposed to sadness, shame, and despair (see Fig. 1a). This dimension can therefore be interpreted in terms of potency-control. The third dimension is an activation-arousal dimension. It is mainly characterized by sympathetic arousal, such as rapid heartbeat and readiness for action. It opposes emotions such as stress, anger, and anxiety to disappointment, contentment, and compassion (see Fig. 1b). The last dimension is characterized by appraisals of novelty and unpredictability (and behaviors such as jaw dropping, eyebrow raising, and spontaneous exclamations), as compared with appraisals of expectedness or familiarity. Obviously, surprise is

[1]Because there are only 24 emotion terms in the analysis, the variation in the 144 emotion features could be perfectly represented by a solution with 24 components. Thus, the matrix is not positive definite (the rank is only 24, not 144). Factor analyses (exploratory or confirmatory) that assume underlying factors cannot be used with these data, as these techniques require a positive definite matrix. PCA, however, is adequate, as it is a pure reduction technique. It makes sense to see whether a matrix of rank 24 can be further reduced to an even smaller number of components without losing much information. Analyzing a matrix with more variables than observations is not uncommon in lexical personality research. In that area of research, as here, the replicability and the reliability of the components are considered most important. A more extensive account of the analytic procedures is available from the first author.

[2]First, a structure was identified across the three languages. Then, a language-specific structure was computed and orthogonally Procrustes-rotated toward the overall structure. For each of the three language groups and for each of the four dimensions, the Tucker's phi congruence coefficient exceeded .90.

[3]The profiles of the emotion words on the four emotion dimensions can be requested from the first author.

TABLE 1

The 144 Emotion Features, the Components of Emotion They Represent, and Their Correlations With the Four Dimensions After Varimax Rotation

Emotion feature	Emotion component[a]	Correlation			
		D1	D2	D3	D4
Incongruent with own standards and ideals	Appraisal	**.926**	.201	.113	.180
Pressed lips together	Face	**.919**	.038	.245	−.086
Wanted to destroy whatever was close	Action	**.914**	.024	.206	−.022
Frowned	Face	**.914**	−.010	.172	.091
In itself unpleasant for the person	Appraisal	**.911**	.321	.103	.103
Wanted to do damage, hit, or say something that hurts	Action	**.908**	−.090	.183	−.011
Wanted to oppose	Action	**.907**	−.131	.195	.053
Consequences negative for person	Appraisal	**.905**	.325	.113	.103
Treated unjustly	Appraisal	**.901**	.172	.091	.212
Felt negative	Feelings	**.886**	.425	.078	−.005
Wanted to break contact with others	Action	**.871**	.354	.105	−.047
Violated laws or socially accepted norms	Appraisal	**.858**	.157	.133	.169
Felt the urge to stop what he or she was doing	Action	**.844**	.457	.109	.142
Wanted to undo what was happening	Action	**.843**	.491	.075	.041
Wanted to prevent or stop sensory contact	Action	**.843**	.454	.074	.064
Felt bad	Feelings	**.835**	.515	.084	.013
Felt inhibited or blocked	Action	**.805**	.491	.186	.094
Wanted to keep or push things away	Action	**.801**	.516	.110	.088
In itself unpleasant for somebody else	Appraisal	**.799**	.294	.026	.149
Consequences negative for somebody else	Appraisal	**.781**	.292	.020	.030
Withdrew from people or things	Gesture	**.760**	.546	.037	.009
Irrevocable loss	Appraisal	**.748**	.450	.117	.137
Moved against people or things	Gesture	**.745**	−.263	.287	.016
Wanted to run away in whatever direction	Action	**.709**	.602	.213	.120
Felt out of control	Feelings	**.702**	.241	.513	.136
Felt powerless	Feelings	**.695**	.619	.079	.162
Wanted to be in control of the situation	Action	**.677**	−.166	.348	−.105
In danger	Appraisal	**.675**	.333	.331	.332
Muscles tensing (whole body)	Body	**.674**	−.052	.636	.177
Tried to control the intensity of the emotional feeling	Regulation	**.669**	.415	.170	−.091
Felt exhausted	Feelings	**.653**	.644	.068	−.029
Consequences avoidable or modifiable	Appraisal	**.641**	−.006	.070	−.338
Hid the emotion from others by smiling	Regulation	**.617**	.581	.123	−.111
Wanted to be in command of others	Action	**.593**	−.497	.229	−.172
Inconsistent with expectations	Appraisal	**.527**	.219	.198	.486
Frequency of experience in the cultural group	Other	**−.321**	−.213	.257	−.245
Caused by a supernatural power	Appraisal	**−.364**	.023	.101	.285
Felt an urge to be attentive to what was going on	Action	**−.475**	−.419	.216	.104
Confirmed expectations	Appraisal	**−.539**	−.405	−.130	−.443
Familiar event	Appraisal	**−.587**	−.349	−.061	−.516
Felt in control	Feelings	**−.684**	−.615	−.127	−.254
Event with consequences the person was able to live with	Appraisal	**−.701**	−.324	−.076	−.187
Important and relevant for goals of somebody else	Appraisal	**−.702**	−.316	−.044	−.100
Important and relevant for the person's goals	Appraisal	**−.724**	−.278	−.001	−.126
In itself pleasant for somebody else	Appraisal	**−.727**	−.451	−.015	−.014
Person was at the center of attention	Appraisal	**−.730**	−.053	.370	−.038
Wanted to take care of another person or cause	Action	**−.739**	−.040	−.091	−.205
Consequences positive for somebody else	Appraisal	**−.757**	−.443	−.058	−.067
Wanted to go on with what he or she was doing	Action	**−.767**	−.536	−.026	−.147
Felt calm	Feelings	**−.771**	−.172	−.529	−.172
Wanted to comply with someone else's wishes	Action	**−.812**	.037	−.084	−.135
Wanted to get totally absorbed in the situation	Action	**−.815**	−.493	.032	−.049
Social acceptability of the emotion	Other	**−.819**	−.193	−.058	.111
Muscles relaxing	Body	**−.827**	−.128	−.368	−.108

Table 1. (Contd.)

Emotion feature	Emotion component[a]	Correlation			
		D1	D2	D3	D4
Felt at ease	Feelings	**−.882**	−.414	−.121	−.082
Wanted to be near or close to people or things	Action	**−.883**	−.145	−.072	−.032
Felt positive	Feelings	**−.887**	−.436	−.034	−.021
Wanted the ongoing situation to last or be repeated	Action	**−.901**	−.392	−.060	−.025
Felt good	Feelings	**−.905**	−.394	−.048	−.011
Consequences positive for person	Appraisal	**−.906**	−.345	−.078	−.070
Smiled	Face	**−.916**	−.341	−.014	−.029
Wanted to be tender, sweet, and kind	Action	**−.916**	−.056	−.198	−.128
Wanted to sing and dance	Action	**−.918**	−.329	.011	.003
In itself pleasant for the person	Appraisal	**−.925**	−.334	−.049	−.017
Wanted to submit to the situation as it was	Action	**−.930**	−.097	−.126	−.020
Decreased the volume of voice	Voice	.076	**.855**	−.360	−.145
Wanted to hand over the initiative to someone else	Action	.024	**.832**	.095	.079
Felt weak limbs	Body	.105	**.832**	.298	.209
Fell silent	Voice	.368	**.831**	−.102	.004
Felt submissive	Feelings	.426	**.825**	.049	−.036
Felt weak	Feelings	.542	**.803**	.012	.076
Wanted to make up for what he or she had done	Action	.220	**.766**	−.083	−.205
Wanted to withdraw into him- or herself	Action	.596	**.765**	.006	−.042
Lacked the motivation to do anything	Action	.535	**.740**	−.218	−.029
Wanted to do nothing	Action	.315	**.737**	−.321	−.071
Wanted to disappear or hide from others	Action	.655	**.713**	.057	−.031
Wanted someone to be there to provide help or support	Action	.498	**.700**	.065	.134
Closed his or her eyes	Face	.092	**.696**	−.164	.040
Spoke slower	Voice	.068	**.683**	−.572	−.132
Wanted to flee	Action	.672	**.679**	.160	.091
Got pale	Body	.589	**.675**	.158	.307
Had a feeling of a lump in the throat	Body	.422	**.671**	.228	.052
Wanted to be hurt as little as possible	Action	.533	**.663**	.123	−.081
Felt cold	Body	.562	**.650**	−.166	.207
Felt tired	Feelings	.598	**.633**	−.052	−.158
Had a trembling voice	Voice	.564	**.632**	.364	.068
Showed tears	Face	.067	**.628**	.112	.020
Had stomach troubles	Body	.600	**.610**	.391	.046
Showed the emotion to others less than he or she felt it	Regulation	.321	**.600**	.103	−.144
Lacked the motivation to pay attention to what was going on	Action	.436	**.591**	−.219	−.095
Will be changed in a lasting way	Other	−.107	**.557**	−.087	−.360
Wanted to act, whatever action it might be	Action	.376	**−.529**	.487	.009
Wanted to move	Action	−.085	**−.581**	.535	−.013
Produced a long utterance	Voice	−.310	**−.599**	.121	−.072
Moved toward people or things	Gesture	−.583	**−.599**	.123	.078
Showed the emotion to others more than he or she felt it	Regulation	−.248	**−.601**	−.069	.330
Caused intentionally	Appraisal	−.205	**−.649**	−.089	−.169
Wanted to show off	Action	−.606	**−.650**	.109	−.107
Felt alert	Feelings	−.100	**−.664**	.473	.166
Felt an urge to be active, to do something, anything	Action	−.184	**−.699**	.407	−.109
Felt powerful	Feelings	−.574	**−.702**	.093	−.182
Felt energetic	Feelings	−.624	**−.707**	.269	.019
Wanted to be seen, to be in the center of attention	Action	−.571	**−.711**	.114	−.112
Felt strong	Feelings	−.589	**−.733**	.111	−.142
Increased the volume of voice	Voice	.079	**−.777**	.460	.218
Wanted to tackle the situation	Action	.034	**−.786**	.242	−.064
Wanted to take initiative him- or herself	Action	−.093	**−.796**	.191	−.126
Felt dominant	Feelings	−.374	**−.822**	.127	−.183
Had an assertive voice	Voice	−.060	**−.908**	.072	−.105
Felt heartbeat getting faster	Body	−.019	−.210	**.927**	.100

Table 1. (Contd.)

Emotion feature	Emotion component[a]	Correlation			
		D1	D2	D3	D4
Felt breathing getting faster	Body	.260	−.099	**.893**	.161
Felt hot	Body	.189	−.077	**.850**	−.088
Sweated	Body	.339	.231	**.843**	.017
Perspired, or had moist hands	Body	.372	.272	**.799**	.005
Spoke faster	Voice	−.055	−.576	**.717**	.107
Produced abrupt body movements	Gesture	.217	−.356	**.688**	.419
Felt restless	Feelings	.397	−.115	**.688**	.066
Was in an intense emotional state	Feelings	.164	.151	**.647**	−.043
Felt shivers	Body	−.048	.157	**.647**	.403
Blushed	Body	−.402	−.049	**.602**	−.212
Felt nervous	Feelings	.541	.381	**.593**	.013
Felt warm	Body	−.413	−.420	**.558**	−.264
Produced speech disturbances	Voice	.520	.461	**.557**	.182
Opened her or his eyes widely	Face	−.254	−.464	**.537**	.496
Required an immediate response	Appraisal	.187	−.005	**.528**	.486
Wanted to overcome an obstacle	Action	.226	−.355	**.509**	−.161
Changed the melody of his or her speech	Voice	−.190	−.287	**.388**	.192
Did not show any changes in face	Face	.008	.085	**−.519**	−.358
Did not show any changes in vocal expression	Voice	−.252	.053	**−.578**	−.357
Did not show any changes in gestures	Gesture	−.017	.288	**−.585**	−.361
Felt breathing slowing down	Body	−.496	.102	**−.701**	−.096
Felt heartbeat slowing down	Body	−.208	.369	**−.715**	.006
Had no bodily symptoms at all	Body	−.154	−.072	**−.779**	.006
Had the jaw drop	Face	−.014	.105	−.129	**.798**
Had eyebrows go up	Face	−.018	−.291	.136	**.723**
Unpredictable event	Appraisal	.120	.153	.348	**.680**
Produced a short utterance	Voice	.399	−.057	.151	**.608**
Event occurred suddenly	Appraisal	−.058	.083	.400	**.589**
Caused by chance	Appraisal	−.516	−.150	.136	**.521**
Caused by somebody else's behavior	Appraisal	.396	−.335	.106	**.416**
Caused by the person's own behavior	Appraisal	−.532	−.126	.069	**−.599**
Consequences predictable	Appraisal	−.320	−.385	−.210	**−.621**
Person had enough resources to avoid or modify consequences of the event	Appraisal	−.027	−.199	.043	**−.632**
Experienced the emotional state for a long time	Feelings	−.089	.224	−.061	**−.755**

Note. For each feature, the highest loading is in boldface. D1 = evaluation-pleasantness dimension, D2 = potency-control dimension, D3 = activation-arousal dimension, D4 = unpredictability dimension.
[a]Action = action tendency, Body = bodily experience, Face = facial expression, Feelings = subjective experience, Gesture = gestural expression, Voice = vocal expression.

distinguished from all other emotions on this dimension. However, meaningful differentiations emerge among these other emotions as well; for example, fear is distinguished from stress and disgust from contempt (see Fig. 1c).

DISCUSSION

The results of this cross-cultural study provide robust evidence that more than two dimensions are needed for a low-dimensional representation of the semantic space of emotion. It is important to note that there were no major differences among the three language-culture groups. As suggested half a century ago, the three most important dimensions are evaluation-pleasantness, potency-control, and activation-arousal, in that order of importance. A fourth dimension, unpredictability, seems necessary to allow a satisfactory differentiation of emotions reflecting an urgent reaction to a novel stimulus or an unfamiliar situation. Although unpredictability has not emerged in most previous general studies of the dimensions of emotion, uncertainty is an important dimension in many appraisal theories (cf. Ellsworth & Scherer, 2003), and unexpectedness in the form of interruption was central to Mandler's (1975) model. In fact, the emergence of this factor in our comprehensive approach may explain the ambivalent status surprise has always had in the emotion pantheon, as it often co-occurs with and is confused with other emotions. Our results suggest that the term *surprise* may in fact refer to a particular quality or dimension of emotional experience based on appraisal of novelty and unexpectedness.

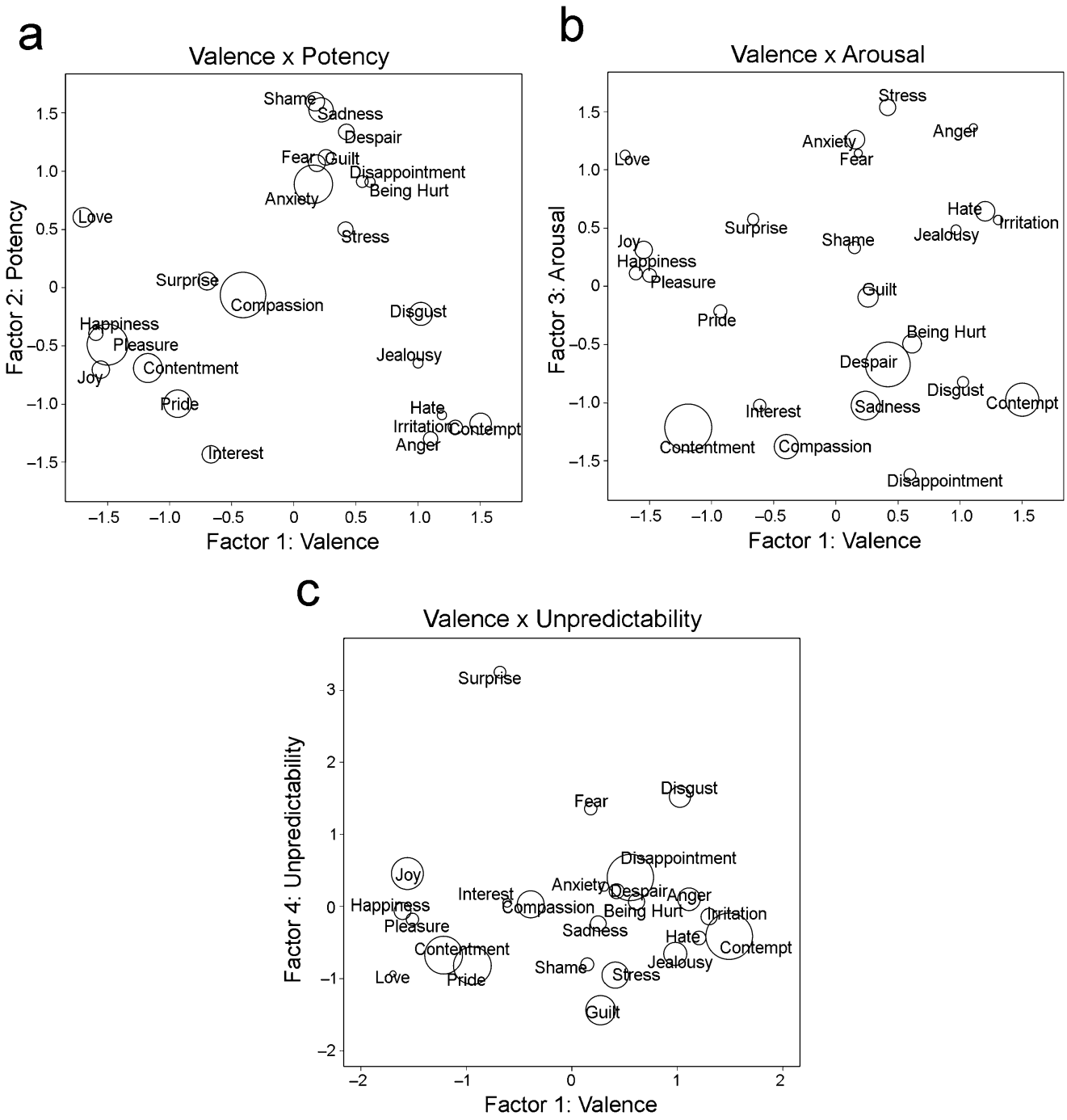


Fig. 1. The four-dimensional solution representing the 24 emotion terms. Midpoints of the circles represent the mean coordinates across the three languages. The diameter of each circle represents the mean euclidean distance among the coordinates for the three languages; the smaller the circle, the more similar the respective terms across the languages. The three panels show plots of coordinates for (a) Evaluation-Pleasantness × Potency-Control, (b) Evaluation-Pleasantness × Activation-Arousal, and (c) Evaluation-Pleasantness × Unpredictability.

The four-dimensional structure of emotion derived in the present research can be considered important because it is based not only on a representative sample of prototypical emotion labels, but also on a representative sample of features of emotional experience. This is the first study that has included all six of the major components of emotion identified by emotion researchers. The explanations as to why the same two or three emotion dimensions emerged in previous research were speculative. A major contribution of the present study is that it recovered the same three dimensions from a very precise analysis of the meaning of emotion terms, as rated on 144 specific criteria that most current emotion theorists explicitly assume are centrally relevant to the domain of emotions. Moreover, basing a dimensional analysis on comprehensive feature profiles for

different emotion terms allowed us to infer, for the first time, the features on which similarity judgments for emotion words and experiences are based and the subsets of those features that underlie specific dimensions (see Table 1). The complete profiles for the terms, with respect to both the 144 individual features and the four dimensions (not reported in this article), allow us to determine which features are essential for the meaning of a term and to compare terms across languages.

A limitation of the current study is that it included only student samples. Although the same overall emotion structure can be expected with representative adult samples—the students were asked not about their own experiences, but about the meaning of the emotion words in their culture—it is possible that slight differences exist between different age groups. For instance, in our student samples, *love* was scored high on arousal features. It is quite possible that the meaning of *love* is associated with less arousal in older age groups.

Moreover, because our research involved perceptions of the meanings of emotion words, it is obviously relevant to the meaning structure of the emotion domain in three *languages*. We cannot be sure that our findings represent the dimensions of emotional *experience*. Robinson and Clore (2002) have highlighted the distinction between current emotion, which is episodic, experiential, and contextual, and beliefs about emotion, which are semantic, conceptual, and decontextualized. Clearly, by design, our data on semantic profiles belong to the latter category. However, the fact that the same four dimensions emerged for all three language-culture groups suggests that the findings represent more than mere linguistic or cultural conventions. We are currently conducting research in a much larger sample of linguistic and cultural groups, including non-Western languages and cultures, and preliminary data confirm the patterns reported here. Although language is abstracted from human experience, it must correspond to human experience and represent important human concerns. Consequently, as the emotion words and features used in the present research are highly similar to those commonly used in procedures for assessing emotion, one would expect to find a similar four-factor structure in assessments of emotional experience. But this is for future research to show. Of course, a representative selection of emotion words and emotion features is a precondition for an emotion-experience instrument to uncover the same structure.

Given that the comprehensive approach reported here confirms the existence and the importance of the classic factors of valence and arousal, working with these two factors is not an issue of right or wrong choices. The optimal number of dimensions to be included in a study depends on the question the researcher is asking. For a researcher interested in the effects of sympathetic activation, one dimension (arousal) may be sufficient. For a researcher interested in the subtle distinctions among related emotions such as shame, guilt, embarrassment, and self-anger, four dimensions might not be enough. But for researchers interested in providing a fairly comprehensive general account of the emotional experiences of the people they study, we strongly advocate using at least four dimensions.

Because models drive research design, restricting the number of emotion dimensions studied may severely bias the choice of methods and the interpretation of results. The current results imply that simple two-dimensional models, such as the valence-arousal model, miss major sources of variation in the emotion domain. Such models fail to differentiate important emotions like fear and anger (see Fig. 1b), which are clearly separated on the potency-control dimension (Fig. 1a) and on the unpredictability dimension (Fig. 1c). The potency-control dimension is of particular interest for emotion research. Its meaning is not limited to social and interpersonal experiences of dominance and submissiveness, as has been suggested in the past (e.g., Russell, 1991). It is also characterized by specific vocal response characteristics and action tendencies, such as wanting to take initiative versus being apathetic. Low potency-control is particularly relevant for emotion researchers who are interested in the biological underpinnings of emotions, as this dimension also captures parasympathetic forms of activation, such as weak limbs and gastrointestinal symptoms. The currently dominant two-dimensional models, such as the valence-arousal model, represent only sympathetic forms of activation (see Fig. 1b).

The findings of the present study have implications for very diverse forms of emotion research. For instance, experimental neuropsychological research designed to identify the brain processes underlying subjective emotional experiences requires a representative mapping of these subjective experiences. For many clinical and applied studies, it is crucial to distinguish whether a person is experiencing fear or anger, and two-dimensional models do not capture this distinction, which can be more adequately studied with the four-dimensional emotion model. Even for those researchers who are interested only in evaluation and activation, the four-dimensional model allows for better control of unintended variation on the two other emotion dimensions. Whereas two-dimensional models may be appropriate for studying some questions, researchers should seriously consider whether such models are sufficient for their particular questions.

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Forget the former things; do not dwell on the past.
See, I am doing A New Thing!
Now it springs up; do you not perceive it?
I am making a way in the desert and streams in the wasteland!

Isaiah 43:18-19